



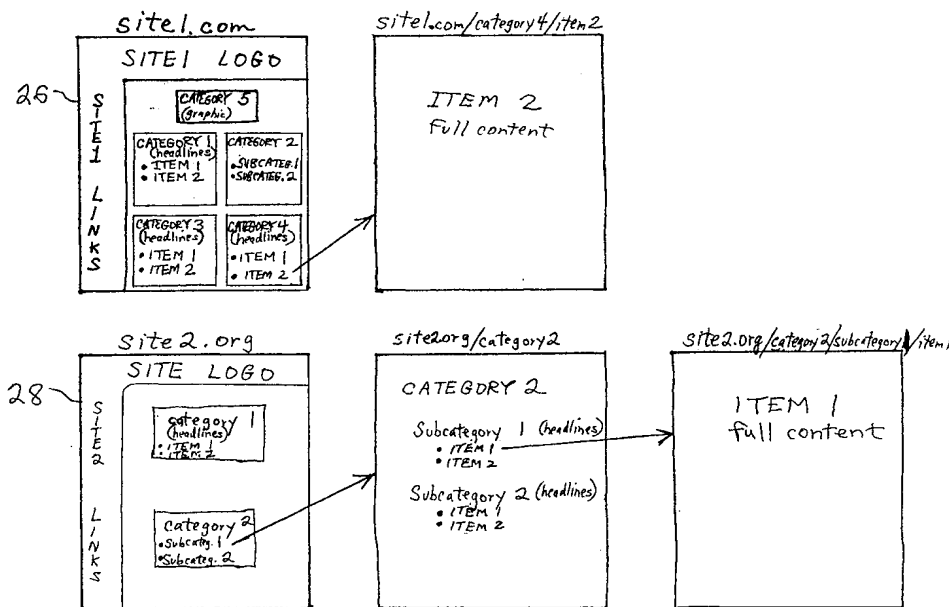
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : G06F		A2	(11) International Publication Number: WO 00/20945
			(43) International Publication Date: 13 April 2000 (13.04.00)
(21) International Application Number: PCT/US99/23116 (22) International Filing Date: 6 October 1999 (06.10.99) (30) Priority Data: 60/103,282 6 October 1998 (06.10.98) US 60/103,293 6 October 1998 (06.10.98) US (71) Applicant: REGIONAL NETWORK COMMUNICATIONS, INC. [US/US]; Suite 300, 190 Brodhead Road, Bethlehem, PA 18017 (US). (72) Inventors: YEE, Kenneth, C.; 7445 Driftwood Road, Northampton, PA 18067 (US). GAUL, Donna, F.; 6426 Constitution Road, Schnecksville, PA 18078 (US). YU, Kun; 16901 Napa Street, #235, North Hills, CA 91343 (US). MARTIN, Richard, D.; 1719 Falcon Drive, Bethlehem, PA 18017 (US). YEE, Susan, C.; 4646 Virginia Drive, Bethlehem, PA 18017 (US). WETZEL, John, E.; 2720 Whitetail Deer Road, Bath, PA 18014 (US). COLSON, Jay, H.; 4215 Jacksonville Road, Bethlehem, PA 18017 (US). (74) Agents: JABLON, Clark, A. et al.; Akin, Gump, Strauss, Hauer & Feld, L.L.P., One Commerce Square, Suite 2200, 2005 Market Street, Philadelphia, PA 19103-7086 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>	

(54) Title: GENERALIZED MULTI-INTERFACED EXTENSIBLE CONTENT MANAGEMENT AND DELIVERY SYSTEM, AND ON-LINE CALENDAR

(57) Abstract

A content management system allows users to post information into pre-authorized areas of public and private Internet and intranet web sites. Users can manage web site content changes and modifications through multi-level security passwords and multi-area zone management. The user interacts with a browser-based content entry tool. Content is entered without using programming language. Content may be syndicated to multiple internal and external sites simultaneously with a one-time entry. An automated, computer-implemented on-line calendar system posts event information associated with a plurality of entities. Each entity has its own calendar. The system includes a calendar database and a calendar assembler. The calendar event database accepts event entry calendar input information from a plurality of content providers and stores the event entries. Each event entry is associated with one or more entities specified by the content provider. Event entries may specify a plurality of entities for posting. The calendar assembler generates calendars of events for each of the entities using the information stored in the calendar event database. The same event entry may appear on calendars of a plurality of entities if specified by the calendar event database. The event entries include private entries which appear only on the calendar of an entity predesignated by the content provider. Event entries which are not designated as private entries are treated as public entries and are available for viewing by any entity calendar.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

TITLE OF THE INVENTION

GENERALIZED MULTI-INTERFACED EXTENSIBLE CONTENT

MANAGEMENT AND DELIVERY SYSTEM, AND ON-LINE CALENDAR

BACKGROUND OF THE INVENTION

5 The present invention is directed to a multi-organization web content management system and a web-based on-line calendar system.

BACKGROUND TO WEB CONTENT MANAGEMENT SYSTEM

10 The present invention establishes the mechanism, the framework, the interfaces and ancillary methodology that allow multiple content creators to submit content, enable content managers to manage and expand their categories independently, facilitate the retrieval and manipulation of contents from multiple categories and merge them into a
15 media form by the content consumer, and automate the processes where warranted.

20 Content management involves submission by creators, collection, editing, and processing by managers and re-distribution to consumers. An example of such a system is the operation of a newspaper. A more advanced example is a web site where feeds from various sources are collected and re-assembled for viewing on a browser.

A conventional static Web site consists of pages containing information units. Anchors embedded in the unit are used to link to logically subsequent units on other pages. A site map can show all the pages and the links among them. Tools abound to facilitate the production of such Web sites, from textual HTML editors to visual page designer like NetObjects Fusion. Programs like LinkBot exist to validate the links among pages; even so, broken links are commonplace on the Web given the inter-relationship among the pages.

This conventional Web site concept becomes merely a shell to an advanced dynamic and interactive site. At the core of such a site are one or more application programs that present the viewer information or functionality on demand. The pages serve as the user interface of the programs. It is not far-fetched to have an entire spreadsheet program running on the Web; Web-based Quattro Pro is available from Corel.

The Web publishing tools available on the market can be divided into two categories: site-centric and page-centric and are all based on the conventional page-and-link structure. They generally facilitate the creation of whole sites or whole pages. Microsoft FrontPage and Net Object Fusion are two examples of the page-centric approach. A leading content publishing package, StoryServer by Vignet, attempts to control the entire site, leaving the site manager little flexibility, resulting in monotonous site designs (see www.news.com, www.cnet.com). None of these products treat web sites as a componentized dynamic system where the content is isolated and treated independent of the web page to submit content for Web publication layout.

Accordingly, there is a need for a system which:
unifies the collection-processing-storage-distribution model
across multiple platforms; establishes the mechanisms,
interfaces and methodology for the efficient and secure flow
5 of content from the creator to the consumer; allows multiple
content contributors; enables content section managers to
manage their sections independently; facilitates the site
manager to retrieve and place contents from multiple
sections and merge them into a site; automates the update of
10 Web content; and enables the syndication of user content to
multiple web sites. The present invention fulfills such
needs.

BACKGROUND TO ON-LINE CALENDAR

On-line calendars allow multiple users to remotely
15 and simultaneously maintain and access a shared calendar
database. One conventional approach is to allow access to
such calendars via an Internet browser and an Internet
Service Provider (ISP). However, if a user wishes to access
a plurality of different calendars from different
20 organizations, the user must separately access different web
sites. Likewise, if the user wishes to post the event to
plural calendars, each calendar must be individually
accessed to add the event. As more personal and
organizational calendars become managed on-line via
25 intranets, wide area networks, the Internet, and the like,
the problem of calendar management grows exponentially.

Accordingly, there is a need for an on-line
calendar system which can effectively and efficiently manage
calendar data from plural businesses, organizations, and the
30 like. The present invention fulfills such a need.

BRIEF SUMMARY OF THE PRESENT INVENTION

SUMMARY OF WEB CONTENT MANAGEMENT SYSTEM

5 The present invention isolates Web site management into three distinct elements: site layout, content creation and content placement. It therefore delegates the separated responsibilities to respective individuals. A visually unified site is substantially divided into sub-sites, or sections, independently maintained by the section managers. As a set of Web content management tools, the present invention is useful for a large corporate site, a community site or a site which enables the sharing of content data across Web sites. Any content-rich site, such as newspaper sites, will find the present invention very helpful.

15 The present invention may be used in a complementary manner with MS FrontPage to do what FrontPage does not. FrontPage's editing capability may be used to allow content creator to copy materials edited in FrontPage into the content database of the present invention.

20 As its name suggests, the present invention does content management. Content mainly refers to textual and graphical information, also referred to herein as electronic digital assets or data. The present invention does not perform visual layout, which is best done with abundance of other programs. In this sense, the present invention is a post-design content management system. Interaction with layout design, however, is beneficial and will simplify design work.

25 The present invention may be used with any programming or scripting language, Cold Fusion, ASP, C++, Visual Basic or Perl. The present invention may serve as an

extension, or add-on component to web development platforms such as Cold Fusion and Active Server Pages. The present invention may also serve as a tool set for CGI and ISAPI programming.

5 The present invention may be used any site that can access Component Object Model (COM) objects. It can be used from within Cold Fusion, ASP, or CGI programs. It is intended to be programming language neutral through the use of COM-DLL, servlets, and Java features.

10 For the client using the Web site as a publication platform, the objectives of the present invention include at least the following goals:

1. To reduce or eliminate the need to manipulate Web site layout.

15 2. To deliver the power of the Web as a publishing channel to the hands of the content creator.

For the site manager, the objectives of the present invention include at least the following goals:

20 1. To modularize a Web site into replaceable selectable components, the objectives of the present invention include at least the following goals;;

2. To decentralize the management of a Web site of diverse content types by separating content and form and distributing the control out content;

25 3. To streamline the publication of daily content and expansion of content areas; and

4. To facilitate the input, administration and

presentation of Web content access across various electronic outlets.

SUMMARY OF ON-LINE CALENDAR

5 An automated, computer-implemented on-line
calendar system is provided which posts event information
associated with a plurality of entities. Each entity has
its own calendar. Depending upon the implementation, each
entity also has an apportionment of a large calendar
10 database, or its own database. The system includes a
calendar database and a calendar assembler. The calendar
event database accepts event entry calendar input
information from a plurality of content providers and stores
the event entries. Each event entry is associated with one
or more entities specified by the content provider. Event
15 entries may specify a plurality of entities for posting.
The calendar assembler generates calendars of events for
each of the entities using the information stored in the
calendar event database. The same event entry may appear on
calendars of a plurality of entities if specified by the
20 calendar event database. The event entries include private
entries which appear only on the calendar of an entity
predesignated by the content provider. Event entries which
are not designated as private entries are treated as public
entries and are available for viewing by any entity
25 calendar.

BRIEF DESCRIPTION OF THE DRAWINGS

30 The following detailed description of preferred
embodiments of the present invention would be better
understood when read in conjunction with the appended
drawings. For the purpose of illustrating the present
invention, there is shown in the drawings embodiments which

are presently preferred. However, the present invention is not limited to the precise arrangements and instrumentalities shown. In the drawings:

5 Fig. 1 shows a content management database in accordance with the present invention;

Fig. 2 shows a sample system configuration for implementing an electronic video shop using the content management system of the present invention;

10 Fig. 3A shows the interconnections between the major elements of the content management system;

Fig. 3B shows details of the content management database associated with the content management system;

Fig. 4 shows sample end products created by the content management system;

15 Fig. 5 is a screen shot from a web browser-based interface which illustrates the hierarchical structure, as well as the functions implemented at each level of the content management system;

20 Figs. 6A-9R show sample screen shots for one commercialized implementation of the present invention in the form of a web content management product.

25 Fig. 10 shows one embodiment of a system for managing the on-line calendar in accordance with the present invention, and shows the interconnections between the major elements;

Fig. 11 shows the database structure, including the objects, used for the on-line calendar; and

Figs. 12-22 show sample screen shots for one preferred embodiment of the present invention in the form of a web content management product.

DETAILED DESCRIPTION OF THE INVENTION

5 Certain terminology is used herein for convenience only and is not to be taken as a limitation on the present invention. In the drawings, the same reference letters are employed for designating the same elements throughout the several figures.

10 DETAILED DESCRIPTION OF WEB CONTENT MANAGEMENT SYSTEM

A. DEFINITIONS

15 Content: any textual, visual and audio materials, or the combination thereof, including animated images, video and audio materials. In a broader sense, the term content covers the categorization of the actual content.

20 Content consumer: a person or a device that retrieves the content from storage for consumption, including web site, printing process, electronic mail system.

 Content consumption: reading, viewing, hearing or redistribution of the content.

B. OVERVIEW OF PRESENT INVENTION

STRUCTURE OF WEB SITES FOR USE WITH THE PRESENT INVENTION

25 Content management should cover multiple web sites such that the contents can be efficiently shared among sites. At the top of the structure is a web, managed by a

webmaster. The content management system supplies content units in the form of wrapped modules. Therefore, contents are independent of the sites while the sites are reliant on the content system.

5 Ideally, a content module would have one calling interface and be located at a site-independent URL. Consider, for example, the following URL's:

1. <http://www.regiononline.com/guild?site=Rest&Phone=1234567>
2. <http://www.regiononline.cm/calendar?site=2&date=4-30-98&class=2>
- 10 3. <http://www.regiononline.com/guides?site=1§ion=edit&type=current>
4. <http://www.regiononline.com/images/header/header1.gif>

In this way, it is possible to eliminate the redundancy of files and folders, simplify site management and enhance the efficiency and performance of the server.

15 Physically, a site consists of "templates." A template is a mold for Web "pages." The template generates pages when given different "parameters." The template defines the layout of the resultant pages while the code and parameters determine the content of the output.

20 To a viewer, a Web site consist of pages, sewn together with anchors and links, in the form of hypertext markup language (HTML).

To a site manager, a site consist of templates in the form of files.

25 In terms of content, a Web site consists of "zones," which have "sections" under them. Zones and

sections are logical content units, rather than placement descriptions. A zone may not be a visual box on a web page; it may span multiple pages; sections in one zone may not appear together. A section may span multiple templates or pages. A section contains articles that can be split into "parts." Articles of a section usually need to be presented in parallel. For example, "Local News" can be a zone, while "Bethlehem News" can be a section, which can have five stories for a day. Part 1's, or the titles of the stories, can be shown as a list. Clicking on one of the list items leads to the detailed story, which can be on a subsequent template.

A part can have a content, an anchor and an image. The content can be pasted in or uploaded as a file. Splitting an article into parts enables presenting a long article in multiple pages and attaching multiple images to an article. It also gives the contributor flexibility in handling the look and page transition of an article.

Besides an image that can be attached to a part of an article, an article can have a "lead image," which usually is needed in front of the title.

DIVISION OF RESPONSIBILITIES (generally)

The site manager controls the physical placement by placing the code that retrieves the content of a section where it is desired to appear. The site manager can place one or more sections in a table cell or in a frame. The site manager does not decide on the content of a section. The site manager's responsibilities are layout, which is usually prefabricated, and placement.

A Webmaster oversees the site managers and the

5 zone manages and sets up their user accounts. The Webmaster decides on the server folder, URL mapping, etc. for the sites. The Webmaster also sets up folder to store documents, images and templates that are shared across sites.

10 The zone manager's role is administrative and includes defining sections within a zone and setting up section manager accounts. The section manager oversees the content contributors and assures that the content and appearance of the materials submitted by the contributors are appropriate. All new articles submitted to a section are subject to the approval of the section manager.

15 The terms webmaster, site manager, zone manager and section manager pertain to the roles, rather than the personalities. There could be one person taking all the roles, or the roles could be delegated to different individuals. The division of responsibilities makes it possible for a team to split the roles and collaborate.

20 A portion of a section that appears on a template is a part of the section. The parts of a section are logically layered, in that a click on part 1 leads to part 2, much like the pages of a book. An example of a section is Ted's Place on Region OnLine (ROL). Part 1 of Ted's Place section is on home.cfm, which leads of part 2 on
25 Content/tedplace/tedarch1.cfm. The complete article is part 3 on content/tedplace/date.cfm. Although the articles are present and stored in separate files now, with the use of a database, they can be accessed from one template. Therefore, Ted's Place section may have 3 parts.

30 It is advantageous to deem Ted's section a module,

with Ted responsible for its content and the site manager for its placement. A section manager can pre-approve the content of a contributor. It is desirable for Ted to have a simple interface to edit, update and archive the articles of his section and for the site manager to be able to place the parts of Ted's section on the templates in an easy way.

Ted will have to know that his articles consist of 3 parts. Each part has its content and some ancillary properties, such as an anchor and an image. He does not know where exactly the parts are placed. He just edits the content and properties of the parts in a table.

The site manager places the parts by Ted as objects. If the manager uses Cold Fusion, the following code is used to put part 3 of Ted's Place where it is desired to appear.

```
<CFOUPUT>#Section.Output("TedPlace")</CFOUTPUT>
```

PROGRAMMING LOGIC

Components:

1. User Interfaces: content input, administration tasks
2. Database: save information on security and content
3. Transfer: access host through HTTP, display content in built-in browser
4. Server Object: enable the serve to interact with the database content; implemented in COM, it makes the present invention programming language-independent

5. Security mechanism
6. Correspondence system

THE DATABASE DESIGN AND ACCESS METHODS

5 The database design handles all article types in any number of parts. The type of databases to be used is not restricted. With Active Data Object as the access method, we can access over one hundred databases, including MS Access, MS SQL Server, Oracle, and all ODBC data sources.

SECURITY CONSIDERATIONS

10 Security is implemented at all levels. The database is stored on the server and checks the user login and presents the current user a temporary key to access the section he or she is authorized to work on. When the current user is finished, the temporary key is destroyed.

15 STATICIZING THE PRESENTATION UNIT

20 The object model of article and part makes it possible to staticize a presentation unit. When the object outputs the content from a query, it can write the results to a local file on the server. The next time the same content is requested, the query need not be executed. A scheme is needed to generate file names unique to a query. The staticized content is cached in a file named SectionyymmddHHAAPP.htm.

DYNAMIC LINKS

25 In order to give the server manager full control over the placement of the parts, the links between the parts to a section are not hard-coded by the content creator who

does not know the exact placement. However, supply parameters to the links are provided such that the server manager can build a link that points to a specific content unit. For example, Ted would put <Click here for more> for the
5 server manager to build a link.

THE NOTIFICATION SYSTEM

When a contributor submits an article, the section manager is notified by e-mail. When the section manager approves/deletes/criticizes an article, the author is
10 notified.

SYSTEM REQUIREMENTS

The client interface is browser-based. No special hardware or software is required. The client needs Internet access, dial-up or whatever, and a browser.

15 In one preferred embodiment of the present invention, the server component requires Windows 95/NT and web server, Microsoft Data Access Components, a scripting or programming environment to call COM objects. One embodiment of the present invention is implemented with Cold Fusion.
20 Another embodiment uses ASP calls to the database.

DIVISION OF RESPONSIBILITIES (detailed lists)

Web Master:

1. Set up a Web root directory, name and password and specify an SMTP server for use by the notification system.
- 25 2. Set up web site managers, allot a server folder for a site.

3. Set up zone managers.

Site manager:

1. Edit templates for a site, place sections on the templates.

5 2. Adopt new templates.

Zone manager:

1. Set up section managers.

2. Create new sections.

Section manager:

10 1. Set up content writers.

2. Approve the content submitted by the writers. The Section Manager may send comment to the writer or delete the article.

Content writers:

15 1. Compose web content in his or her favorite editing environment, decide on the content and appearance of the articles.

2. Upload the article to the server.

20 When a section manager uses his or her password to enter a particular section, the articles in the section become accessible. The Section Manager can add an article or pick an existing article from a list to modify. The Section Manager logs out when he or she is done with the article.

The site manager uses a few lines of code to extract the content that the content creator has submitted. Generally the site manager needs to specify the section and a display mode. If the site manager specifies a display of
5 part 1 and more than one article is available, there will be a list of part 1's. The anchors are automatically built such that a click on part 1 leads to part 2 of the article. The content appears wherever the code is put in a table cell or a frame. In other words, the present invention handles
10 the output of content and the navigational links between the content units.

For example, the site manager may use a simple command: <% .getContent(SectionID, ArticleID, PartID, NumberOfArticles %>

to retrieve the content of a section, where:

15 SectionID is the name of the section;

ArticleID is usually programmatically supplied. If set to zero, the latest are retrieved;

PartID specifies either the header or body; and

NumberOf Articles: Zero means all current ones, 1 means the
20 latest one, etc.

USER KNOWLEDGE REQUIREMENTS

A content contributor needs to know how to type plain text. Special characters are automatically converted into HTML format. If a word processor is used to generate
25 an HTML file and upload the file, the content contributor must know where the file is located. Alternatively, the content contributor needs to know how to use a word-processor.

The web server needs something to read CGI parameters. CGI programming or server-side scripting tool, such as Cold Fusion, ASP, are sufficient for this purpose.

5 The site manager needs to understand what this system does and the sample implementations. The site manager does not need to do any coding.

Graphical designers need to understand the concept of templates and pages, and they need to make fewer replicates of their designs.

10 C. DETAILED DESCRIPTION

STRUCTURE OF THE CATEGORIES

15 The basis for content management is the categorical division of the content. Content may be divided into hierarchical categories. A news organization, for example, may categorize the news content into "sports", "business", etc. Each category is a collection of subcategories, such as "sports>swimming", and a sub-category is a collection of sub-subcategories, "sports>swimming>free style", and so on. There is no limit to the number of
20 levels to the hierarchy, but each branch should be unique.

One way for managing such a hierarchy is using a relational database, such as an ANSI SQL database. The information on the categories can be stored in data tables while the database maintains the relationships among the
25 units. Another way for managing such a hierarchy is using an object-oriented or hierarchical database, such as the registry of Windows-NT.

The ways cited above for managing the hierarchy are the choice of the person implementing the system. The

implementation person may choose another means, or devise one of his or her own, to maintain the categorical structure. The present invention is directed to concerns about the functionality of such a structure that is outlined
5 as follows:

1. Each category may contain contents or "items".

2. Each category may contain subcategories, which in turn, are referred to as categories. Thus, a category may be main category with or without subcategories in one structure; a
10 category may be a subcategory in another structure; or a category may be a sub-subcategory in another structure. The individual web site designer decides how to arrange the category structures.

3. Each category may be assigned to distinct individuals
15 or "contributors" to maintain.

4. The existence of a category depends on the category immediately above it.

5. A manager of a category has control over the categories under it.

20 6. A category may contain actual contents or pointers to, or addresses of, contents.

7. Each category and each content unit are uniquely identifiable.

Fig. 1 illustrates a content management database
25 10 organized in a category-type format. Note that in category 3, one of the contents is a pointer to a web site.

This taxonomic structure for content

classification is capable of handling any and all systems of natural relationships. Therefore, the categorization system can be considered a model for the content body.

5 The present invention achieves the implementation of the functionality of such a structure with the use of object-oriented databases, relational databases, computer file systems, computer network protocols and the combinations or hybridization thereof.

10 INTERFACES THAT FACILITATE THE CREATION
AND MAINTENANCE OF THE CATEGORIZATION

For the content managers, interfaces are devised for the creation and maintenance of such a taxonomic structure. As far as computer software is concerned, such interfaces can be designed in the form of application
15 programming interfaces (API's), which allow the addition, deletion and setting the properties of categories, and which can be accessed with a programming or scripting language.

INTERFACES THAT ALLOW COLLECTION,
MAINTENANCE AND DELIVERY OF CONTENT

20 For the content creators, managers and consumers, interfaces are designed for content collection, maintenance and retrieval.

END USER INTERFACES

25 The end user interfaces can be implemented desktop computer applications, web browser applications, or any other device that can take user selection and present the content.

STATICIZING MECHANISM

Although the content presentation is dynamic and in response to users' requests, the variations in the requests are limited and the same requests are often repeated. Staticizing provides content dynamics on an "as
5 needed" basis. The bottleneck for the speed of content delivery, as far as the server is concerned, is usually the database search and content processing. When the server receives a request, it is converted into a set of search
10 criteria and a search is conducted by the database. The records found are processed and merged into a format, such as HTML, that is suitable for consumption. Two ways are used to speed this process:

1. Partial response caching. The requests are processed into unique identities and related to the final
15 content units ready to be delivered. When the same request is received, no search and process is needed and the cached content is served out.

2. Full response caching. The fully assembled response, such as a front page of a web site, is cached so
20 that majority of the processing time is saved.

SECURITY AND AUTHENTICATION

Security is implemented at all levels. Only authorized identity can access certain categories or functionality. The authorization can be based on
25 organizational or corporate designation, or on financial transactions, e.g., payment received.

EXAMPLE IMPLEMENTATIONS

1. An Electronic Video Shop

The video shop divides its content materials into

categories such as Comic, Action, etc. A manager is assigned to a category. The present invention allows the category manager to retrieve video content materials from sources (content creators, such as Universal Studio) and place them under his or her category in a way that is described in the following pseudo-code:

```
Invention.DepositVideo(Category:=Action, Source:=US,  
SourceLocation:=name/Password@ftp.US.com://newRelease/ArnoldSchwartzneger1234  
5, Description:=best Ever)
```

The present invention builds interfaces for the end user to search for content in the content collection by various criteria. Upon the user selection, a device, or a program, will request the specific content to be sent to the user in a way that is described in the following pseudo-code:

```
Invention.DeliverVideo(title:=USnewAS12345, authenticated:=Yes,  
Mode:=HighResolution)
```

Fig. 2 shows a sample system configuration for implementing the electronic video shop. The entered search may include one or more keywords, categories, or combinations of keywords and categories. In Fig. 2, a web browser 16 accepts a search input query which is routed by an ISP 18 to an interface 20 connected to the content management database 10 and the content database 14. A search engine 22 uses the user's search input query to search the content database 14.

2. A Web Content Management System

This system enables the collection of content from

various sources, such as newspaper and magazine content systems, individually written articles, and the placement of content units on designated Web sites. It divides the content into levels of categories and assigns an owner to each category who has control over the content in his or her category. Multiple content creator, or writer, can be assigned to a category. The interfaces of the system facilitate the submission of content materials from various sources. For example, a desktop computer application is compiled to help a writer fill in the category name, user name, pass word, article header, etc. A visual what-you-see-is-what-you-get editing environment is incorporated in the application such that the writer needs not to know any more than ordinary composition. The communication protocols are built in the system such that the content can be transferred from the creator to a server and is processed and stored in appropriate databases or file structures. The manager of the category will then have the chance to examine the new content and decide whether it will be published. Once approved, the consumer can access the content in a presentation that is suitable for consumption on his or her device of choice, such as a computer program, a television set.

For efficient storage and retrieval for web distribution, textual content is stored in HTML (hypertext markup language) or XML (extensible markup language) and multimedia content in its native format.

Fig. 5 is a screen shot from a Web browser-based interface which illustrates the hierarchical structure as well as the functions implemented at each level of the web content management system.

Figs. 3A, 3B and 4 illustrate one embodiment of a web content management system in accordance with the present invention. Fig. 3A shows the interconnections between the major elements, Fig. 3B shows details of the content management database 10 used in Fig. 3A, and Fig. 4 shows sample end products as viewed at an end user interface, such as a browser. These figures illustrate how the present invention allows the contents of a single category to appear in a plurality of unrelated web sites 24 (labeled as 1-n), each of which may have completely different page layouts. The same categories and their content may thus be automatically populated in multiple web sites. The "contributors" of Fig. 1 are equivalent to the content providers 12 of Fig. 3A.

Referring to Figs. 3A and 3B, a central site or a plurality of distributed sites includes a content database 14 for storing the content, and a content management database 10 for storing instructions regarding how the content is used and managed. A plurality of content providers 12 (labeled as A-Z) transmit content to locations in the content database 14. In one scheme, each content provider 12 is permitted to submit content to one or more preselected content numbers. There is a content number for each category item shown in Fig. 1. For example, content 1 may be item 1 of category 1; content 2 may be item 2 of category 1; content 3 may be item 1 of category 2, subcategory 1, and so on. Passwords and other appropriate security measures are used to ensure that content is received only from the predesignated provider. To facilitate illustration of the present invention, the content management database 10 is shown in Fig. 3B as an index of categories and the web site location at one or more web sites where the content (items) should appear.

The content provider 12 does not create the content management database 10. Instead, individual web site personnel and/or their authorized entities, set up and maintain the information in the content management database 10.

Referring to Figs. 3A, 3B and 4, consider the home page 26 of Site 1 which is arranged with five categories. Categories 1, 3 and 4 each have two hypertext-linked items identified with a headline or teaser line (article header). Category 2 has two hypertext-linked subcategories. Category 5 is a single graphic item. The headline of the items in contents 1, 3 and 4 appear in their respective locations of the Site 1 homepage 26, and the full-text or full version of the items appear at the respective web site addresses shown in Fig. 3B. For example, the full version of item 2 of category 4 appears at: site1.com/category4/item2, as shown in Fig. 4.

Home page 28 of Site 2 is arranged with categories 1 and 2. The physical layout of category information may be different in sites 1 and 2, depending upon the formatting/layout of the sites and the number of different categories. Since category 2 has two subcategories, the home page lists the two subcategories as hypertext links. Clicking on a subcategory link brings up a web page of subcategory items. Clicking on the items brings up the full versions of the item contents. Fig. 4 shows an example for viewing subcategory 1, item 1. Site 2 does not have categories 3-5.

In the example shown in Fig. 3B, site6.com (not shown in the figures) includes categories 3 and 5, but not categories 1, 2 and 5.

In the web page structure shown in Fig. 3B, the full version of content, as well as the clickable subcategory listings, are located on separate web pages and are not part of the front page web page. In an alternative web page structure, the full version of content appears on the same web page as the front page. For example, referring to Fig. 4, the item 2 full content may be located at the following address: site1.com/frontpage?category=4&item=2

The alternative structure uses less pages and thus is more efficient, especially for a web site with a large number of branches.

As illustrated by this example, the same categories, (and thus, the same content items), may be automatically populated in a plurality of different web sites. In this example, when submitting the content, the content provider must indicate which portion of the content is the headline and which portion is the full version. A summary of the content may also be provided if the web sites have separate locations or pages for content summaries. If the content of a category is subsequently changed and the change is approved by the site manager, the new content replaces the old content in each of the respective web sites.

As discussed above, a manager or administrator is assigned to each category for examining newly submitted content and deciding if it should be published.

The present invention may be used to create electronic newspapers for a plurality of web sites. Thus, a news article, sports article or weather report may simultaneously become the content of a local school

newspaper, a regional newspaper, and a national newspaper. In the newspaper example, the content provider 12 may be a reporter, writer, photographer, subscriber (e.g., for letters to the editor or a feedback section), or even a
5 newswire service such as the Associated Press. Of course, the electronic newspaper is only one example of an application for the present invention and is not meant to limit the scope of the invention.

10 Figs. 6A-9R show sample screen shots for one commercialized implementation of the present invention in the form of a web content management product called "PublishNow," marketed by Regional Network Communications, Inc. (RNCi), Bethlehem, PA. PublishNow works in conjunction with other two products, "WriteNOW" and "CalendarNOW," also
15 marketed by RNCi. WriteNOW is a web content entry tool for use with PublishNOW. WriteNOW uses Microsoft Word. The screen shots illustrate exactly how a user interacts with the product, and thus are self-explanatory. Some additional explanation of selected figures is provided below.

20 Figs. 6A-6H show the article submission process using a browser-based version of WriteNOW.

Figs. 7A-7C show the article submission process using a non-browser version of WriteNOW software (ver. 2.25).

25 Figs. 8A-8Q show PublishNOW user interface screens. The "Site" Functions (Place Departments, Upload Template) are performed by the Site Administration Module, shown in Figs.

9A-9R.

Figs. 9A-9R show user interface screens for the Site Administration Module used with PublishNOW.

DETAILED DESCRIPTION
OF ON-LINE CALENDAR

5 Fig. 10 illustrates one embodiment of a system 100 for managing the on-line calendar in accordance with the present invention, and shows the interconnections between the major elements.

10 Referring to Fig. 10, a central site or a plurality of distributed sites $112_1, 112_2, \dots, 112_n$, hosts a master calendar 114. The master calendar includes an event database 116 for storing all events which appear in the organization calendars. Each organization $1, 2, \dots, n$ has a section of the event database 116. Each organization has
15 "public" events and "private" events. Public events are stored as public entries in the event database 116, and private events are stored as private entries in the event database 116. A public event can be viewed by anyone
20 accessing a web site associated with the master calendar entity. A private event is posted only to a particular organization's calendar. Passwords and other appropriate security measures may be used to ensure that content is received only from the preauthorized providers 117. Users
25 access the organization calendars in one of two ways. The user may access the web site of the master calendar entity through a user computer 118 and an ISP 120. Alternatively,
30 the user may directly access the web site of the organization via the user computer 118 and view the organization's calendar through its web site 112 which either mirrors or links to the master calendar entity.

The on-line calendar described below is preferably

built using Microsoft Active Server Pages (ASP) and Component Object Model (COM) objects for fast response and design flexibility. ASP allows for good integration with the web server and system stability. COM objects make the system more efficient. Since a COM object is an actual compiled program (as opposed to a script that is processed) and is bound to the web server, the COM object becomes a natural extension of the server. Since a COM object is compiled, it runs faster and more efficiently.

The on-line calendar is preferably hosted on a Windows NT Server running Microsoft's IIS4 web server software, and the database is preferably stored in a Microsoft SQL Server.

Fig. 11 shows the database structure, including the objects, used for the on-line calendar.

Figs. 12-22 show sample screen shots for one preferred embodiment of the present invention in the form of a web content management product called "CalendarNow," marketed by Regional Network Communications, Inc. (RNCi), Bethlehem, PA. The screen shots illustrate exactly how a user interacts with the product, and thus are self-explanatory.

CALENDAR DISPLAY

The calendar display object is built using date routines that will fill-in the events for a particular month, defaulting to the current month. In addition to selecting a day in the month, the object has next and prior buttons that will scroll through the months of the year.

An automatic resizing feature is built into the

calendar object. This allows the calendar to fluctuate in size based on the data that surrounds it. Both the graphics and the text are resized proportionally, the graphics in steps of one pixel and the text in steps of one font size.

5 T strut (placeholder) is built in some cases to equalize both.

Fig. 12 is an example of a Calendar Display, and Fig. 13 is an example of a Calendar Detail. Hypertext links are underlined.

10 CALENDAR SEARCH

The calendar search is full-featured with several ways in which to view events. First, events are selected by the time period the user defines:

15 Today
 By Month
 By day of the month
 By a range of days

20 Second, the events are further defined by the following parameters if someone selects specific values from their drop-down list boxes.

 location (venue)
 organization or department
 keyword
 type of event (category)

25 PUBLIC VS. PRIVATE EVENTS

This application allows for events to be designated as "Open to the Public" or "Private to your Organization". In general, when an event is defined as public, it will display on a calendar page that can be

viewed by anyone using a browser. In general, when the event is marked as private, it will only view on the organization's Intranet calendar page. This eliminates the need for dual entry of an event. An example of a private
5 event is a departmental staff meeting, while a public event might be a charitable event held by the organization.

Fig. 14 shows SQL used in a Public Calendar Display and a Public Event Detail.

HYPERTEXT LINKS

10 The event detail generates several hypertext links, thereby allowing the user to gain additional information directly from the calendar page. Links are generated for the organization's web site and the online ticket house. The location name is linked out to mapping
15 software. Email links are provided for ease of communications between a person viewing event information and the person who generated the event in the calendar.

MASTER EVENTS, SUBEVENTS, AND STAND-ALONE

20 Events are classified into 3 types. A Master Event is the uppermost level of an event hierarchy. All events that are posted under the Master Event are setup as Subevents and are grouped together by date in the calendar display. A stand-alone event does not have a master event and is a unique event in and of itself.

25 At the end of setting up a Master Event in the "Add Wizard" the application immediately returns to the beginning of the wizard in preparation for the entry of the first subevent. All entry fields are preset to the values from the Master Event for ease of use.

Fig. 15 shows a display screen adding an event for the Ominus Systems company calendar.

EVENT SCHEDULING

5 The application provides several ways for the event to be scheduled. An event can be non-repeating and have one end date. For a repeating event, options include daily, weekly, every 2, 3, or 4 weeks, monthly, every 2, 3, or 6 months (which covers quarterly) and yearly. Based on
10 the start date provided, the day of the week and the week of the month is calculated so an event can be scheduled once a month on that specific day.

Each repeat of the application can have a duration. An example of this would be a group meeting that runs for 2 days each quarter. Finally, the end date defines
15 when the calculated repetitions should stop. The application allows for up to 3 years in the future. When an event is inserted into the database, the program generates a record for each occurrence. In this way the calendar displays the event correctly on any day or month entered in
20 the search criteria.

Fig. 16 shows a display screen used for adding master event scheduling details to the Ominus Systems calendar.

MULTI-CALENDAR

25 Flexibility has been built into the application so the event can be shown on several different calendars. Should a particular site accommodate more than one calendar, the person setting up the event can designate what calendars the event will show on. The calendars are preset in a

database table and display on the page with checkboxes.
More than one calendar can be selected.

5 When the event is inserted into the selected
databases, the controlling database maintains records of the
other calendar locations. If the event must be updated or
deleted, the controlling database makes calls to the other
calendars to apply the changes there as well.

Fig. 17 shows a display screen for adding an event
to plural calendars.

10 SECURITY LEVELS

Content-level security is provided to assure
accurate entry of events. Each calendar has an
Administrator account. This account has the capability to
add, update, and delete all components of the database. All
15 other levels in the security hierarchy are setup to either
approve events or enter events. There are no system limits
to the number of security levels an organization can setup.

Fig. 18 shows a security level hierarchy chart.

Fig. 19 shows a screen display which provides a
20 listing for the Administrator of all the accounts setup in
the database. The administrator can see what departments
have been setup and who is designated as an Administrator
and a User.

Fig. 20 shows a screen display used for updating
25 an account. Each account can be viewed individually. This
is where the Administrator designates an individual as
having approval security.

Fig. 21 shows a screen display used for processing

pending events. An event submitted by a non-Approval user is held pending review by an Administrator. The department approval account is sent an email notification that an event is pending approval. Upon review of the event information, the approver can add or delete the event. Adding an event will cause the event to display on the designated calendars.

CALENDAR HELP

The following text provides an example of "HELP" text for the CalendarNOW product hosted by RegionOnline, in accordance with the first embodiment of the present invention, as shown in the display screens above (Figs. 12-22) and discussed above. The HELP text further explains the operation of the present invention from the user's standpoint, and thereby further explains the programming attributes of the present invention.

[BEGIN HELP TEXT]

1. Navigating through the calendar (generally)

It's very easy to move from one day to another in the calendar. Simply click on a day of the month in the main calendar display and you'll see a list of all events happening on that day. Events are always displayed to the right of the main calendar display and they are grouped by category. You can also click on Last and Next, which appear to the left and right of the month respectively, to change the month you are viewing.

To view the details for any event, simply click on the event name. This will present you with information about the event such as its dates and time, feature, organization, location, description, admission fee and contact information.

2. Searching the calendar (generally)

In addition to browsing the calendar by day of the month, it's possible to search for specific events. This is done via the search form located beneath the main calendar display. A search will always begin on the current day that you are viewing and extends for a specified number of days. The default search length is 7 days, but the viewer can change that number to as many days as desired, up to 99 days. The search can be further defined by specifying exactly what feature, organization and location should be searched. The default search will encompass all categories, organizations and locations, but you can be as specific as you would like by pulling down on any of the three menus. Finally, a search may be specified by typing a keyword in the keyword entry field. Once you've defined your search, click the SEARCH button to view your results. If there are too many results, try to narrow your search criteria. If there are too few results, try broadening the search criteria.

3. Adding your events to the calendar (generally)

To add an event to the calendar, click on the EVENT SETUP button on the main calendar display. This will present a login page that gives access to the calendar administration module. If no login is available, the page will explain how to contact the calendar administrator for the creation of an account.

4. Detailed HELP text

Introduction

Welcome to the administrative center of the calendar. Using a series of simple and intuitive forms, you'll be able to post and maintain events for your

calendar. Since your calendar is part of the main RegionOnline system, events you add can also be seen by all of RegionOnline's users. Of course, you can always specify events as private so only individuals viewing your calendar will see them. You'll notice that the HELP button on each page links to a specific section in this document. If you are ever unfamiliar with a function or have a question about what to do. Simply click on HELP for the answers you need.

Logging in

The interactive calendar system requires that all individuals and organization who wish to add events be authorized to do so. Once you've been authorized, a login will be created and you will be given a logon ID and password. This login is specific to you and your organization. Please do not give this information to anyone else who wishes to post events to the calendar. If you do not have a logon ID and password or you have forgotten your login information, please contact the Calendar Administrator. After you've entered your logon ID and password, click the LOGIN button to access the calendar administration system.

Account maintenance

Updating your login information

You may update your login information at any time. This allows you to change your name and e-mail address as they appear in the calendar. In addition, you may change your password. To change your password, simply type your old password, your new password and then confirm your new password by typing it again. When finished, click the UPDATE button to commit login information changes to the system.

NOTE: You cannot change your login ID or organization.

Adding accounts

Calendar users who've been granted administrative access can create accounts, thus allowing new users to add their events to the calendar. In order to create a new account, you must specify the following: the user's full name, logon id, password, e-mail address and organization. In addition, you must also specify whether the user should be granted administrative privileges. Users who only need to add events for their organization should not be granted administrative privileges. If, however, the user is going to add events and create accounts for individuals in her or his organization, administrative privileges should be granted. When finished, click the ADD button to create the new account.

NOTE: Duplicate logon IDs are not allowed, if you inadvertently add an account with a logon ID that is already in use, you'll receive a warning message. Simply change the login ID to something unique and resubmit the account. Also, if you would like to create an account for someone and their organization is not listed, you must first create the organization with the "Add an organization" feature of the calendar administration system. (See Fig. 22 for a screen display which performs this function.)

Updating accounts

Calendar users who've been granted administrative access can update existing accounts. You must first select the login ID you wish to update and click the GO GET IT! button. The user's account will then be displayed. You can modify the user's e-mail address, active flag,

administrative privilege and organization. By setting the account's active flag to N, the user will no longer be allowed to logon. Conversely, an active flag of Y gives the user the ability to logon to the calendar system. Users who
5 only need to add events for their organization should not be granted administrative privileges. If, however, the user is going to add events and create accounts for individuals in her or his organization, administrative privileges should be granted. After making the desired changes to the account,
10 click the UPDATE button to commit the changes. Optionally, you can select another calendar user's login ID and click the GO GET IT! button to make other changes.

NOTE: You cannot modify a user's login ID or name. The user can update their name by logging in and using the "Update
15 your Login Information" feature of the calendar administration system. Also, if you would like to change the user's organization and their new organization is not listed, you must first create the organization with the "Add an Organization" feature of the calendar administration
20 system. (See Fig. 22.)

Listing accounts

Calendar users who've been granted administrative access can list existing accounts. This list is sorted by organization and allows the administrator to view both
25 administrative and general user logon IDs. In addition, full names and activity flags are displayed. An activity flag of Y means the user has the ability to logon to the calendar system and an activity flag of N means the user cannot logon to the calendar system. By clicking on any user ID, you can
30 modify the account. This function is identical to the update an Account feature of the calendar administration system.

Event maintenance

Adding events

Events can be added to the calendar system from one form. The first section of the form defines the event name and when the event will occur. Both the event name and starting date must be provided. The ending date, starting time and ending time, however, are optional. By default, all events are considered to be one time only. They occur once and do not reoccur. However, the calendar system supports reoccurring events and you can specify an event entry as occurring daily, weekly, monthly by day, monthly by date, quarterly by day, quarterly by date, yearly by day or yearly by date. By providing the date on which the event last occurred, the calendar system can accurately calculate when the next and future occurrences will take place.

The second section of the form is used to provide detailed information about the event itself. You must specify the feature with which the event is associated and the location where the event will occur. If an appropriate feature or location is not available, you can take advantage of the calendar's "Add a Feature" and "Add a Location" administrative functions respectively. In addition to the feature and location, you must also specify a contact name, phone number and event description. Optionally, you can specify additional location information for the event.

By default, all events are open to the public. However, some events may be for individuals in your organization only. In such cases, you can designate their calendar entries as private to your organization. This setting will ensure that the event is posted only to your organization's calendar and not on the main RegionOnline

calendar of events, which your calendar is section of.

When events are added, you have the option to associate them with an event series. An event series is a way to group similar events such as a lecture series or football games. To associate an event with a series, simply select the appropriate series. If you are currently entering the first event in a series, keep the default (none) setting and the series will automatically be created with the specified event name. You should also keep the default (none) setting if you do not wish to associate the event with a series. While the system will treat the entry as if IT were the first in a series, you are not obligated to add additional events to IT. IT can exist as a stand-alone or single event not associated with any others.

Finally, events can be flagged as having admission charges. By default events are considered to be free of charge, but you can designate an event as having a fee by selecting Yes to the question "Is admission charged for the event?" Optionally, you can specify the Internet ticket order address (a valid URL for the web site where tickets are being offered or sold) and any pertinent admission information.

When you are finished adding the event's information, click the ADD button to continue. You will then be asked to verify the event information you just provided. If you've designated the event to be part of an event series, the page will specify the name of the series under which it will be posted. If the event is the first of a series or it is not meant to be part of a series, the page will simply state 'This event is an Event Series. If any information in the page is incorrect, simply click the BACK

button on your browser to make necessary adjustments.
Otherwise, click the ADD button on the page to add the event
to the database. Your event will not be added to the
database until you verify the information and click the ADD
5 button.

NOTE: Events posted by administrative users will be posted
to on the calendar immediately. Events posted by general
users, however, require an administrator's approval. In such
cases notification will be sent to the administrator,
10 letting her or him know that a new event has been added and
requires approval.

Updating events

The first step to updating an event already posted
to the calendar is selecting it by name. Highlight the
15 event you wish to work with from the menu and click the GO
GET IT! button. The event's information should be displayed
and you can begin the second step, which is updating the
actual entry.

Events updated are done from one form. The first
20 section of the form defines the event name and when the
event will occur. The event name, starting date and ending
date must be provided. The staffing and ending times,
however, are optional. By default, all events are considered
to be one time only. They occur once and do not occur again.
25 However, the calendar system supports reoccurring events and
you can specify an event entry as occurring daily, weekly,
monthly by day, monthly by date, quarterly by day, quarterly
by date, yearly by day or yearly by date. By providing the
date on which the event last occurred, the calendar system
30 can accurately calculate when the next and future
occurrences will take place.

The second section of the form is used to provide detailed information about the event itself. You must specify the feature with which the event is associated and the location where the event will occur. If an appropriate feature or location is not available, you can take advantage of the calendar's "Add a Feature" and "Add a Location" administrative functions respectively. In addition to the feature and location, you must also specify a contact name, phone number and event description. Optionally, you can specify additional location information for the event.

By default, all events are open to the public. However, some events may be for individuals in your organization only. In such cases, you can designate their calendar entries as private to your organization. This setting will ensure that the event is posted only to your organization's calendar and not on the main RegionOnline calendar of events, which your calendar is section of.

When events are added, you have the option to associate them with an event series. An event series is a way to group similar events such as a lecture series or football games. To associate an event with a series, simply select the appropriate series. If you are currently entering the first event in a series, keep the default (none) setting and the series will automatically be created with the specified event name. You should also keep the default (none) setting if you do not wish to associate the event with a series. While the system will treat the entry as if it were the first in a series, you are not obligated to add additional events to it. It can exist as a stand-alone or single event not associated with any others.

Finally, events can be flagged as having admission

charges. By default events are considered to be free of charge, but you can designate an event as having a fee by selecting Yes to the question "Is admission charged for the event?" Optionally, you can specify the Internet ticket order address (a valid URL for the web site where tickets are being offered or sold) and any pertinent admission information.

When you are finished updating the event's information, click the ADD button to continue. You will then be asked to verify the event information you just provided. If you've designated the event to be part of an event series, the page will specify the name of the series under which it will be posted. If the event is the first of a series or it is not meant to be part of a series, the page will simply state "This event is an Event Series." If any information in the page is incorrect, simply click the BACK button on your browser to make necessary adjustments. Otherwise, click the UPDATE button on the page to add the event to the database. Your event will not be updated in the database until you verify the information and click the UPDATE button.

Deleting events

Removing an event from the calendar is a two-step process. First, you must select the event that you would like to delete from the list and click the GO GET IT! button. The event's information is displayed, but the event has not been removed from the calendar yet. The second step is to confirm your deletion by clicking the DELETE button at the bottom of the page. This will remove the entry from the system and return you to the main calendar administration screen. If you do not want to delete the current record, you

can optionally select another record to delete and click on the GO GET IT! button to continue the process.

Processing pending events

5 Calendar administrators have the responsibility to
approve calendar entries added by non-administrative users.
Once the user adds an entry, you will receive notice that an
event is awaiting your approval. The entry will not be
posted to the calendar until it is approved. Within the
administration system, you'll be shown the pending events
10 and given the option to either ADD or DELETE them. If you
wish to approve the pending event, click the ADD button. If
you wish to deny the pending event, click the DELETE button.
Events that are added/approved to the system will be visible
to all calendar users and denied events will be removed from
15 the system. If there are more than one event pending
approval, you will see the next pending entry after
approving the first. This continues until there are no
additional pending entries.

Organization maintenance

20 Adding organizations

 Main calendar administrators can create new
organizations. These are functional groupings within your
organization with which users and events are associated. To
add a new organization, you must provide the following
25 information: organization name, contact name, street
address, city, state, zip code and phone number. Optionally,
you may also specify a fax number, Internet address (a valid
URL for the organization's web site) and a brief
description. After completing the form, click the ADD button
30 to add the new organization to the calendar system.

Updating organizations

Main calendar administrators can update existing organizations. You must first select the organization you wish to update and click the GO GET IT! button. The organization's information will then be displayed. An active flag of Y means the organization's events are to be displayed in the calendar and an active flag of N means the organization's events are not shown. When updating the organization, the following information must be provided: contact name, street address, city, state, zip code and phone number. Optionally, you may also specify a fax number, Internet address (a valid URL for the organization's web site) and a brief description for the organization. After updating the organization's information, click the UPDATE button to commit the changes. Optionally, you can select another organization and click the GO GET IT! button to make other changes.

NOTE: You cannot change the organization name.

Location maintenance

Adding locations

Locations are the physical sites within your organization where events occur. An executive board room, theater or lecture hall are all examples of possible locations. Events are associated with locations to provide more specific directions to users who wish to attend. To add a new location, the following information must be provided: location name, street address, city, state and phone number. Optionally, you may also specify the Internet address (a valid URL for the location's web site) when creating a new location. Once you've defined the new location, click the

ADD button.

NOTE: Once you've added a new location, anyone else from your organization can add events to it. This includes individuals from other organizations.

5 Updating locations

All calendar users can update existing locations. You must first select the location you wish to update and click the GO GET IT! button. The location's information will then be displayed. An active flag of Y means the location is available for calendar event entry and an active flag of N means the location is not available. When updating the location, the following information must be provided: location name, street address, city, state, zip code and phone number. Optionally, you may also specify an Internet address (a valid URL for the organization's web site) for the location. After updating the location's information, click the UPDATE button to commit the changes. Optionally, you can select another location and click the GO GET IT! button to make other changes.

20 Feature maintenance

Adding Features

Main calendar administrators can create new categories. Categories are descriptive groupings with which all events are associated. For example, events could be categorized as Sports, Business or Entertainment. In order to create a new feature, you must first associate it with an existing RegionOnline feature. This is necessary because your calendar makes use of the main RegionOnline calendar system and your events can also appear on RegionOnline. You

do not have to use the RegionOnline feature names -- you merely have to associate your organization's feature names to one of those already defined by RegionOnline. After you've selected the RegionOnline feature, click the GO GET IT! button. You can then enter the feature name that you'd like to use on your calendar and click the ADD button. Optionally, you can select another RegionOnline feature and click the GO GET IT! button to add other categories.

Deleting Features

Main calendar administrators can delete categories. Because categories for your organization are related to RegionOnline categories, you must first specify the RegionOnline feature with which the feature to be deleted is associated. After selecting the RegionOnline feature and clicking the GO GET IT! button, you'll be presented with a list of categories defined by your organization. To delete a feature, simply click on it. Optionally, you can select another RegionOnline feature and click the GO GET IT! button to delete other categories.

[END OF HELP TEXT]

It will be appreciated by those skilled in the art that changes could be made to the embodiments described above without departing from the broad inventive concept thereof. It is understood, therefore, that this invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.

What is claimed is:

CLAIMS

1. An automated, computer-implemented content management system for publishing content to a plurality of electronically accessible sites, each site including at least one predesignated page layout having one or more content categories within the page layout, the system comprising:

(a) a content database which stores a plurality of content entry items submitted by one or more content providers;

(b) a content management database that specifies which content entry items appear in the content categories for each site, wherein the content management database may specify that a particular content entry item shall appear in content categories of a plurality of sites; and

(c) a site page assembler which automatically generates completed pages for each of the sites in the predesignated page layout format using the information stored in the content management database and the content database, wherein the same content entry item may be syndicated to a plurality of sites if specified by the content management database.

2. A system according to claim 1 wherein the content entry items include content submitted directly by a content provider.

3. A system according to claim 1 wherein the content entry items include pointers to the location of the contents from a content provider.

4. A system according to claim 1 wherein each

category includes a plurality of subcategories, the content management database specifying which content entry items appear in the content subcategories for each site, wherein the content management database may specify that a particular content entry item shall appear in subcontent categories of a plurality of sites.

5. A system according to claim 1 wherein each category includes at least one predesignated, authorized contributor.

6. A system according to claim 1 wherein each category includes at least one predesignated, authorized manager.

7. A system according to claim 1 wherein each category includes a plurality of content entry items.

8. A system according to claim 1 wherein the sites are selected from the group consisting of web sites, intranets and extranets.

9. A system according to claim 1 wherein each content entry item includes a short version and a full version, the content management database specifying:

(i) a category for the short version, and

(ii) a location within the site for the full version.

10. A system according to claim 9 wherein the short version is a headline describing the full version.

11. A system according to claim 1 wherein the system is web-based so that content is submitted and

assembled pages are made available to the plurality of sites via the worldwide web.

12. A system according to claim 1 wherein the plurality of sites are electronic media outlets.

13. A system according to claim 1 wherein the content is electronic digital assets or data.

14. A system according to claim 1 further comprising:

(d) a content entry device which allows the content provider to enter the content without using programming language.

15. An automated, computer-implemented on-line calendar system for posting event information associated with a plurality of entities, each entity having its own calendar, the system comprising:

(a) a calendar event database which accepts event entry calendar input information from a plurality of content providers and stores the event entries, each event entry being associated with one or more entities specified by the content provider, wherein event entries may specify a plurality of entities for posting; and

(b) a calendar assembler which generates calendars of events for each of the entities using the information stored in the calendar event database, wherein the same event entry may appear on calendars of a plurality of entities if specified by the calendar event database.

16. A system according to claim 15 wherein the event entries include private entries which appear only on

the calendar of an entity predesignated by the content provider.

17. A system according to claim 16 wherein event entries which are not designated as private entries are treated as public entries and are available for viewing by any entity calendar.

18. A system according to claim 15 wherein the entities are selected from the group consisting of organizations, businesses and individuals.

19. A system according to claim 15 wherein the event entries include one or more event descriptors selected from the group consisting location or venue, organization or department, keyword, and type of event or category, thereby allowing event entries in the calendar event database to be searched by descriptors.

10 →

CONTENT MANAGEMENT DATABASE					
<u>Category</u>	<u>Subcategories</u>	<u>Contents</u>	<u>Websites</u>	<u>Contributor</u>	<u>Manager</u>
Category 1	none	Item 1 Item 2	1, 2	JRC	MAL
Category 2	Subcateg. 1	Item 1 Item 2	1, 2	{ ARZ	SRB
	Subcateg. 2	Item 1 Item 2		{ BSC	
Category 3	none	Item 1 Item 2 www.cs/contents4	1, 6	SNA	FLS
Category 4	none	Item 1	1	SNA	FLS
Category 5	none	Item 1	1, 6	FRB	CNA

FIG. 1

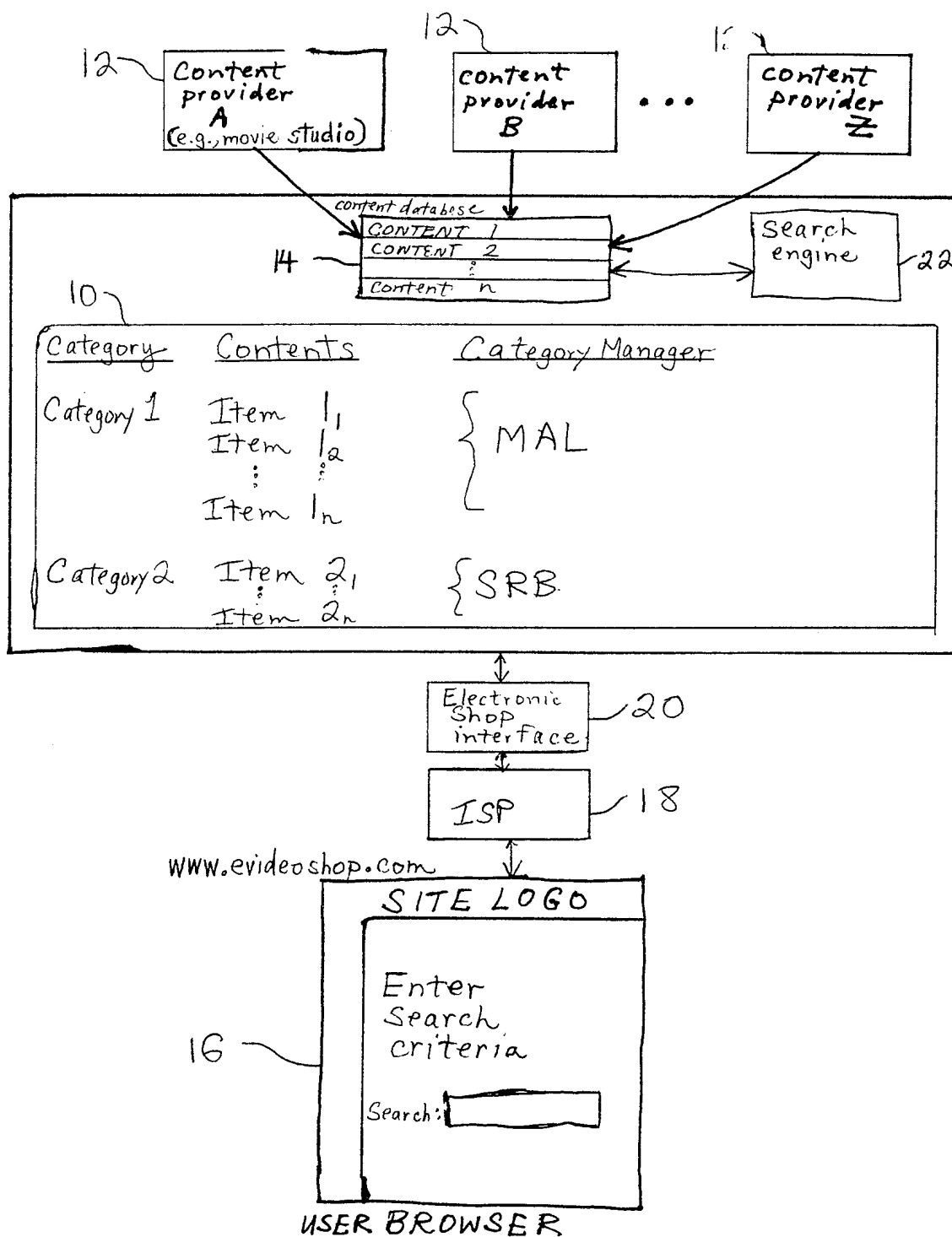


FIG. 2

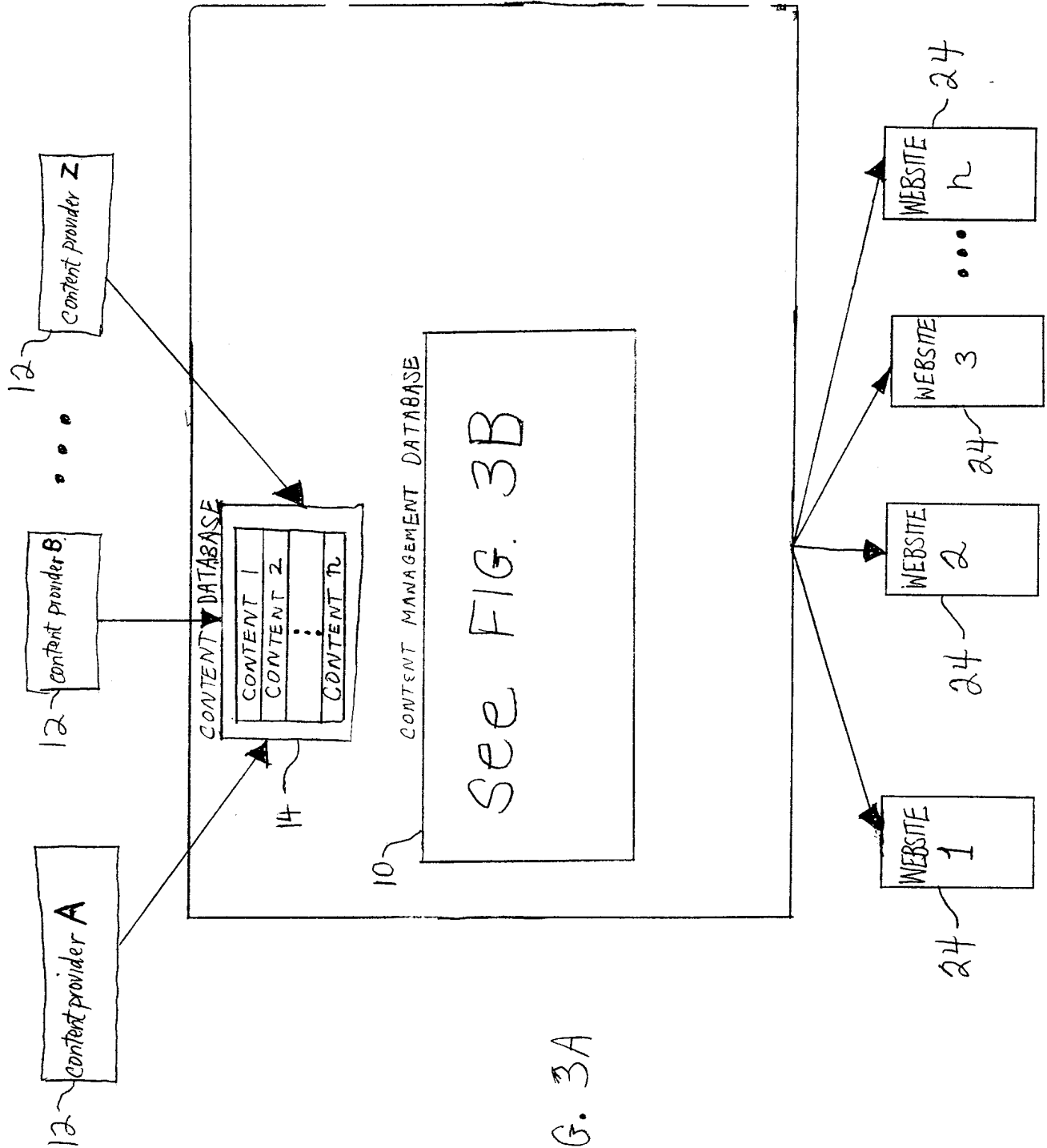


FIG. 3A

102

CONTENT MANAGEMENT DATABASE		
CATEGORY	WEBSITES WHICH RECEIVE THE CATEGORY	WEBSITE ADDRESS FOR FULL VERSION OF CONTENT (ITEMS)
1	site1.com site2.org	site1.com/category1/item1 site1.com/category1/item2 site2.org/category1/item1 site2.org/category1/item2
2	site1.com	site1.com/category2/subcategory1/item1 site1.com/category2/subcategory1/item2 site1.com/category2/subcategory2/item1 site1.com/category2/subcategory2/item2
	site2.org	site2.org/category2/subcategory1/item1 site2.org/category2/subcategory1/item2 site2.org/category2/subcategory2/item1 site2.org/category2/subcategory2/item2
3	site1.com site6.com	site1.com/category3/item1 site2.com/category3/item2 site6.com/category3/item1 site6.com/category3/item2
4	site1.com	site1.com/category4/item1 site1.com/category4/item2
5	site1.com site6.com	site1.com } (graphic placed on) site6.com } (home page)

FIG. 3B

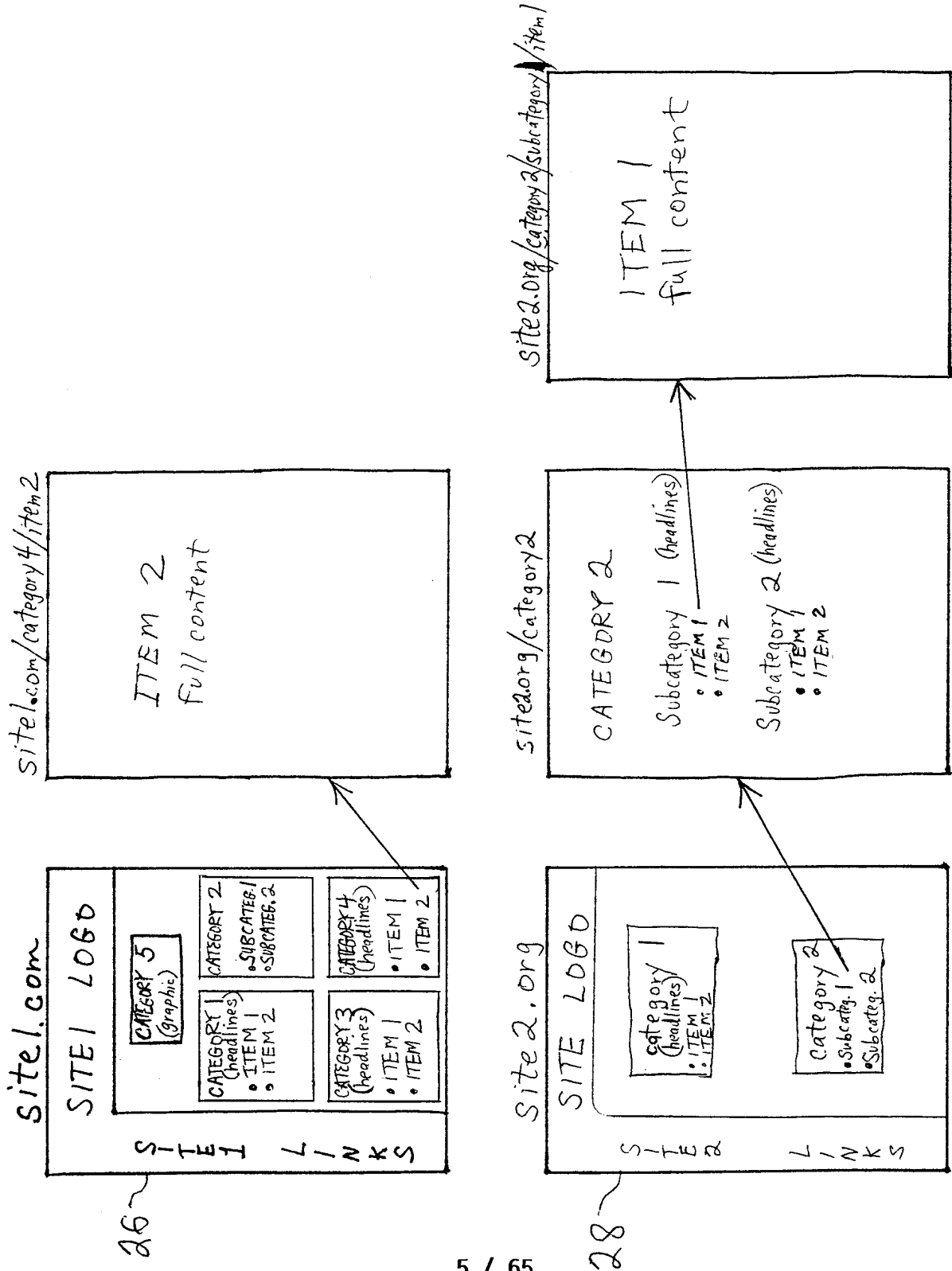


FIG. 4

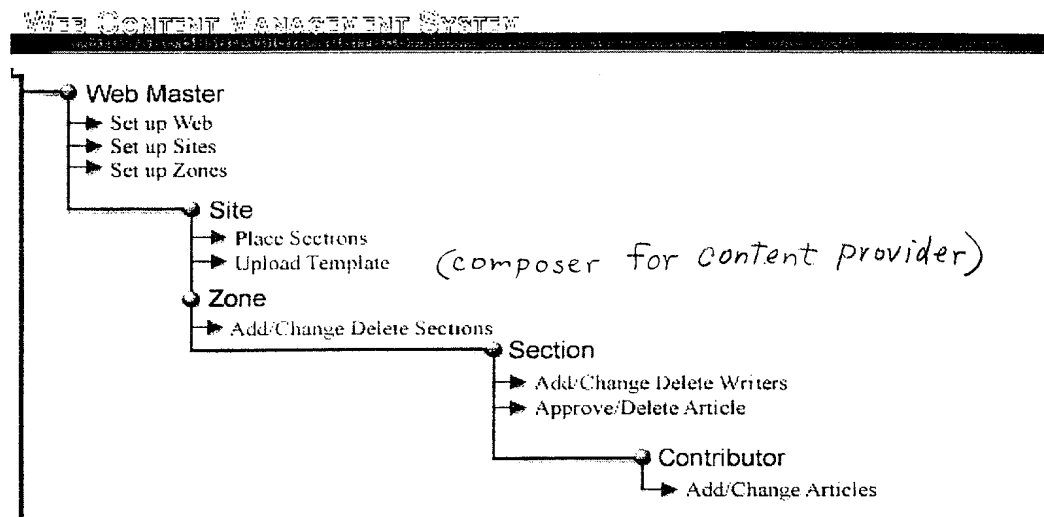


FIG. 5

Login

Please enter your user id and password.

User ID:

Password:

LOGIN

HELP

FIG. 6A

Site Selection

Please select the site you want to publish to:

Site: ▼

FIG. 6B

Article Information

Demo Site	
User ID:	internet
Email Address:	<input type="text" value="dbooths@rnci.com"/>
Section:	<input type="text" value="nydemo"/> or click <input type="button" value="SEARCH"/> to find a section
Article Title:	<input type="text" value="RNCi's technology selected as web content management s"/>
File to Upload:	<input type="text" value="click to search for your file"/>
or	
Free-format Text:	<div><div></div><div></div></div>
<div><input type="button" value="SUBMIT"/> <input type="button" value="RESET"/></div> <div><input type="button" value="HELP"/></div>	

FIG. 6C

Section Search for Demo Site

User ID:

internet

The section contains the characters:

SEARCH

Click on the section to continue.

[NYdemo](#)
[PhillyDemo](#)

HELP

FIG. 6D

Article Submission**Demo Site**

User ID: internet
Email Address: dbooths@nci.com
Section: nydemo
Article Title: RNCi's technology selected as web content management system to
manage and syndicate content across the Internet
File Name: P:\Media\Press Releases\1999 PRESS\REVISED RNCi's
Technology Selected as Content Tool 990910.doc
File Status: File upload was successful

[Publish another Article](#)[Preview the Article](#)[Publish to a different site](#)**HELP**

FIG. 6E

From: PublishNOW <kyu@nci.com> on
To: Debra A Booths-Fickert/Rnci@Rnci
cc:
Subject: Action on your article submission to PublishNOW.

Your article [] to nydemo in publishnow has been accepted at 9/20/99 4:08:24 PM .

FIG. 6F

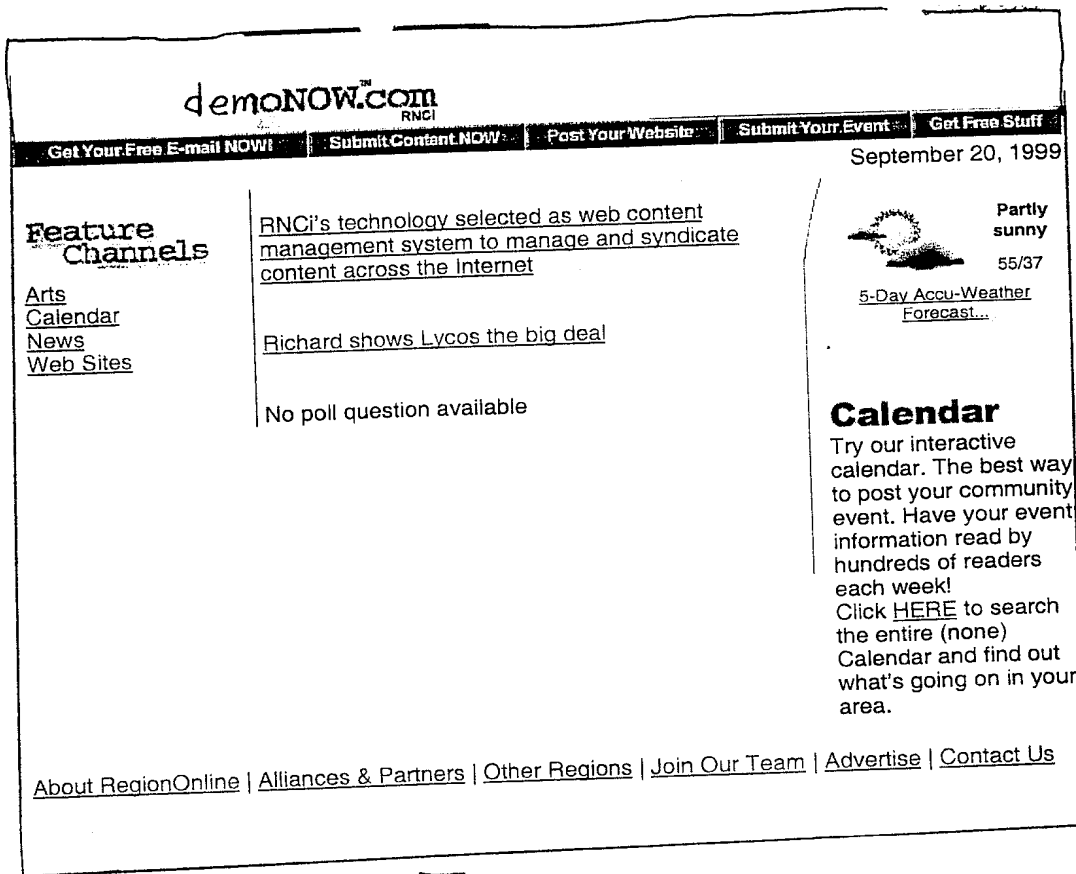


FIG. 6G

Article Preview**Demo Site**

Please allow a few minutes for the article process to complete.

RNCi's technology selected as web content management system to manage and syndicate content across the Internet

.. News Release .. News Release ..

Date: Monday, September 13, 1999

Contact: Debra Booths-Fickert, Director of Marketing

Phone: (610) 997-8100, Email: dbooths@RNCi.com

Federal Reserve Bank of Philadelphia and Ben Franklin Technology Center

Select RNCi's Web Content Management System to Manage and

Syndicate their Content Across the Internet

Bethlehem, PA: 13-September-1999 – RNCi, an Internet Content Media company, announced that the Federal Reserve Bank of Philadelphia and the Ben Franklin Technology Center have licensed RNCi's PublishNOW web content management system as the platform for their corporate web sites. In addition to site management, they will syndicate their content to multiple locations within their corporate web sites and external sites – including RNCi's national network of community web guides, RegionOnline.

[END OF PREVIEWED ARTICLE]

For more information, visit www.RegionOnline.com, and www.RNCi.com, call Debra Booths-Fickert at 610-997-8100, or send email to dbooths@RNCi.com.

#30#

[Publish another Article](#)

[Publish to a different site](#)

HELP

FIG. 6H

WriteNOW

File Profile Advanced About Help

WriteNOW

Article Destination

Client: **pubtest**

Section: **pubdirtest**

Article Information

Title

☐ Publish without a Title

Subtitle

Byline 1 Byline 2

Priority

Edit *Save* *Send*

pubdirtest

Profile

WriteNOW

Client Section

User Name Password

Email Address

OK

FIG. 7A

File Profile Advanced About Help

WriteNOW

Article Destination

Client: **pubtest**
Section: **pubdirtest**

Article Information

Title

☐ Publish without a Title

Subtitle

Byline 1 Byline 2

Priority

pubdirtest

Proxy Configuration

WriteNOW

Proxy Host Proxy Port

Direct connection is assumed if
proxy server is not set.

Content Server

FIG. 7B

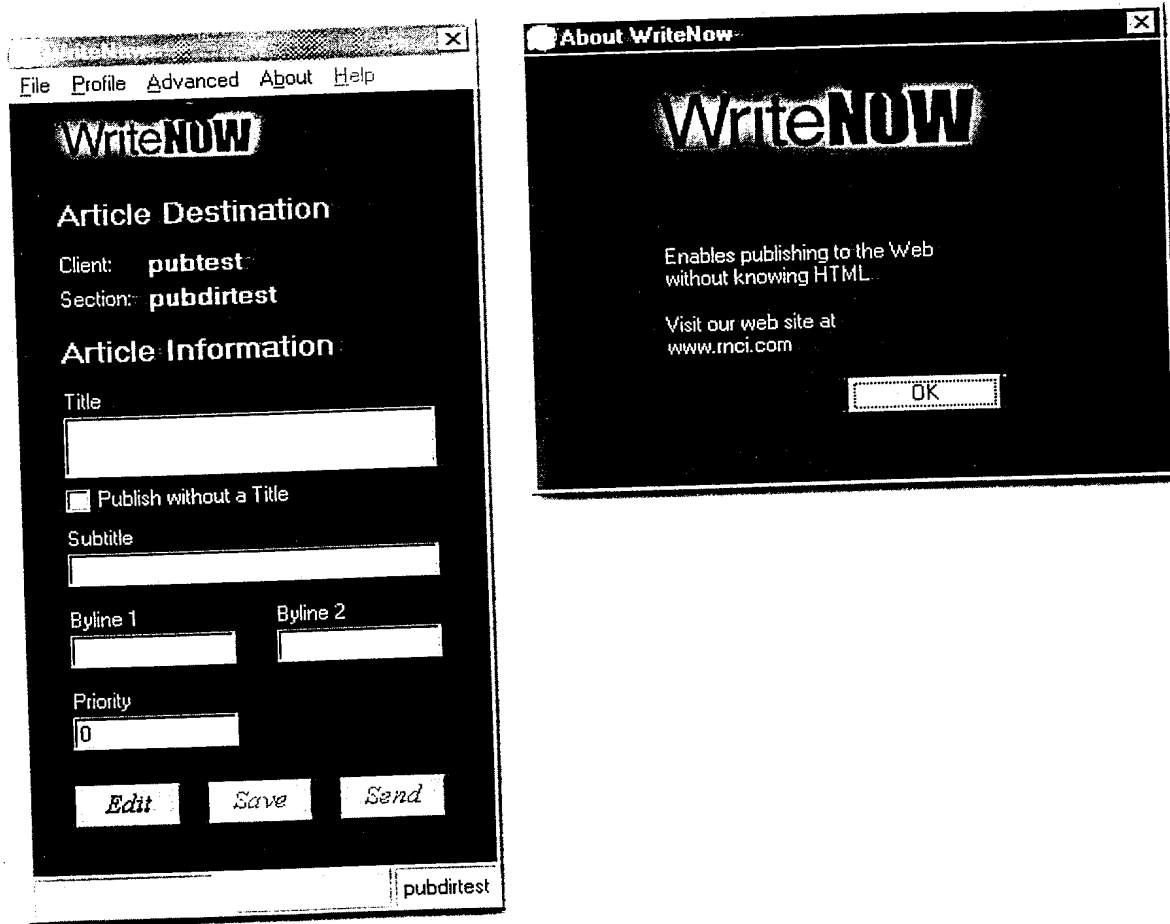


FIG. 7C

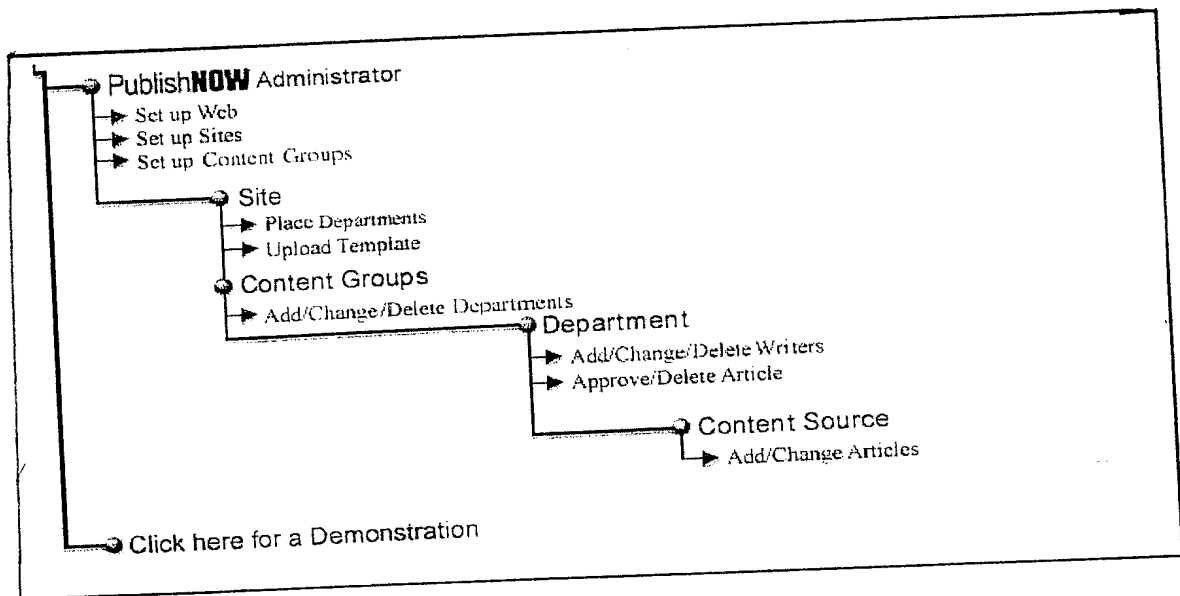


FIG. 8A

PublishNOW Administrator

 **Set Up Web**

As a Web manager, you may edit or add Web sites and content zones on your *Web*. The site manager will place the content by the section.

Name:

Password:

Logon

FIG. 8B

As a Web manager, you may edit or add Web sites and content zones on your *Web*. The site manager will place the content by the section.

PublishNow Web Setup

Root DIR	Owner	Password	WebRoot	SMTP Server	Email
d:\ms_iis\www\clients	itnow		http://www.regiononline.com	smtp.regiononline.com	support@nci.com

FIG 8C

PublishNOW Administrator

 **Set Up Sites**

As a Web manager, you may edit or add Web sites and content zones on your *Web*. The site manager will place the content by the section.

Name:

Password:

FIG. 8D

As a Web manager, you may edit or add Web sites and content zones on your Web. The site manager will place the content by the section.

PublishNOW Site Setup

SiteID	User Name	Password	URL	Server Folder	Change	Delete
LVPA	kenny		lv.pa.regiononline.cc	e:\ms_iis\www\rol\lv	Change	Delete
WB3Edemo	kenny		lv.pa.regiononline.cc	e:\ms_iis\www\rol\lv	Change	Delete
RNCI	kenny			e:\ms_iis\www\rol\lv	Change	Delete
					Add	

[Logout](#)

FIG. 8E

PublishNOW Administrator

 **Set Up Content
Groups**

As a Web manager, you may edit or add Web sites and content zones on your *Web*. The site manager will place the content by the section.

Name:

Password:

FIG. 8F

As a Web manager, you may edit or add Web sites and content zones on your Web. The site manager will place the content by the section.

PublishNOW Zone Setup

ZoneID	User Name	Password	Change	Delete
testimonials	shannon		Change	Delete
3DAnimation	shannon		Change	Delete
BethlehemStar	shannon		Change	Delete
RegionOnline	sye		Change	Delete
RNCiawards	shannon		Change	Delete
restaurants	richard		Change	Delete
y2k	shannon		Change	Delete

• • •

Change Delete

shannon

Add

Logout

Comarketing

FIG 8G

Content Groups

Add/Change/Delete Departments

As a Content Group manager, you may edit or add sections in your *Content Group*. You are the quality assurer for the content of sections of your Content Group.

Choose a
Content
Group:

Username:

Password:

FIG. 8H

As a Content Group manager, you may edit or add sections in your *Content Group*. You are the quality
content of sections of your Content Group.

assurer for the

CalendarNOW Content Group Setup

Department	Owner	Password	Email
calendarnow	deb	*****	dbooths@rnai.com

Logout

FIG. 8I

Department

➔ Add/Change/Delete Writers

As a Section Manager, you may change or add writers for a section.

Choose a Department:

Username:

Password:

FIG. 8J

As a Section Manager, you may change or add writers for a section.

calendarnow Section User Setup

User Name	Password	Email	Pre-Approved
shannon	****		y
deb	*****		y
richard	****		y
sueyee	****		y

FIG. 8K

Department



**Approve/Delete
Article**

Choose an article:

Premier Communication Tool | By deb<2/11/99> | By deb<2/11/9 | By deb<8/31/99> by deb [y] ▼

Choose

Logout

FIG. 8L

Premier Communication Tool By deb<2/11/99> By deb<2/11/9 By deb<8/31/99> by deb	
<p>Comments:</p> <p>Comment on your Premier Communication Tool By deb<2/11/99> By deb<2/11/9 By deb<8/13/99></p> <p>Send</p> <p>Approve</p> <p>Delete</p>	<p>Premier Communication Tool</p> <p>CalendarNOW</p> <p>Contact our Sales Department for an Online Demonstration!</p> <p>Premier Communication Tool</p> <p>CalendarNOW is the perfect communication tool for businesses or organizations that post public or private event information. Entirely web-enabled, CalendarNOW allows users to post events from any computer accessible to the Internet – without installing any proprietary software. CalendarNOW is a central location for meetings, training schedules, trade shows, product launch dates, and other events that can be scheduled and accessed by all employees in different locations.</p> <p>⋮</p> <p>CalendarNOW Features – Front-End User Interface</p> <ul style="list-style-type: none"> • Clickable calendar display for easy day-to-day navigation • Events are grouped by category and event series • Customizable headers and footers for organizational calendars • Advanced search capabilities • Interactive HELP area <p>For more information contact us today at 1.888.865.7624 or email us at info@RNCi.com.</p>

FIG. 8M

From: ePublisher Section latestheadlines <syee@nci.com> on
To: Debra A Booths-Fickert/Rnci@Rnci
cc:
Subject: RNCi's Web Content Management Tool, CalendarNOW | By deb<8/13 | By deb<8/13/99>

Send Comment on your RNCi's Web Content Management Tool, CalendarNOW | By
deb<8/13 | By deb<8/13/99>
Deb,
The purpose of this press release...

FIG. 8 N

Content Souce

Add/Change Articles

As a Content Contributor, you may edit or add articles in your *department*.

Choose a Department:

Username:

Password:

FIG. 80

As a Content Contributor, you may edit or add articles in your *department*.

Choose an article:

Premier Communication Tool | By deb<2/11/99> | By deb<2/11/9 | By deb<8/31/99> ▼

Append parts: If you set [append parts] to non-zero, you are in effect adding a new article and should change the article ID.

FIG. 8P

Edit the parts of the article.

Article ID				
Premier Communication Tool	By deb<2/11/99>	By deb<2/11/9	By deb<8/31/99>	▼
Lead Image				
Use<Lead Image>tag to place this image where you want it to appear				
You may type in, copy and paste in your content or upload an HTML file for each part of the article				
Part 1:				
<input type="text" value="Premier Communication Tool"/>				
<code><Lead Image><a>Premier Communication Tool</code> ▲▼				
HTML File:				
Anchor:				
<input type="text"/>				
Image File:				

(Cont. on Fig. 8Q-2)

FIG. 8Q-1

(cont.
from Fig. 3Q-1)

Part 2:

CalendarNOW

Contact our Sales Department for an Online Demonstration!

Premier Communication Tool

CalendarNOW is the perfect communication tool for businesses or organizations that post public or private event

...

For more information contact us today at 1.888.865.7624 or email us at info@RNCi.com.

```
<BR><BR><BR>
<A HREF="guest.asp">Contact</A> our Sales Department for an
Online Demonstration!<P>
<B>Premier Communication Tool</B><BR>CalendarNOW is the
perfect communication tool for businesses or organizations
that post public or private event information. Entirely
<P>
For more information contact us today at 1.888.865.7624 or
email us at <A HREF="http://www.rnci.com/guest.asp">
info@RNCi.com.</A><P>
```

HTML File:

Anchor:

Image File:

Time to go up

2/11/99 10:14:00 AM

Time to go down

12/31/2099 11:14:00 AM

Priority

0

Submit

FIG. 8Q-2

The screenshot displays a web application interface. On the left is a vertical sidebar menu with a list of items, each preceded by a small circular icon. The items are: Login, Template Add, Template Delete, Page Add, Page Change, Page Delete, Page Report, Block Setup, Block Report, Page Event Setup, Publish Report, PublishNOWAdd, and IT Only. The 'Login' item is highlighted. To the right of the sidebar, the word 'Login' is displayed in a large, bold font. Below this, the text 'Please enter your user id and password.' is shown. Underneath this text are two input fields: 'User ID:' followed by a text box, and 'Password:' followed by a text box. Below the password field is a button labeled 'LOGIN'.

Login

Please enter your user id and password.

User ID:

Password:

LOGIN

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOWAdd
- IT Only

FIG. 9A

<ul style="list-style-type: none">LoginTemplate AddTemplate DeletePage AddPage ChangePage DeletePage ReportBlock SetupBlock ReportPage Event SetupPublish ReportPublishNOWAddIT Only	<p>Please select the site you want to administer:</p> <p>Site: <input type="text" value="RNCi"/> ▼</p> <p><input type="button" value="LOGIN"/></p>
--	--

FIG. 9B

<ul style="list-style-type: none">LoginTemplate AddTemplate DeletePage AddPage ChangePage DeletePage ReportBlock SetupBlock ReportPage Event SetupPublish ReportPublishNOWAddIT Only	<h3>Template Add for RNCi</h3> <p>Select the Template Number: <input type="text" value="1"/> <input type="button" value="GO GET IT!"/></p> <hr/> <h4>Template1</h4> <p>This template is already in use by site pages. Please contact IT if you need to modify this template.</p> <ul style="list-style-type: none">casearmstrongcaseexpresscaselucetcasenewyorkclientlinksdemoofproductsfaqHotNewsinternetmarktipsphillybusjournalstrivepub
--	---

FIG. 9D



Template Delete

Template Delete for RNCi

Select the Template:

DELETE

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOWAdd
- IT Only

FIG. 9E



Page Add

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOWAdd
- IT Only

Page Add for RNCi

Page name:

Select the Template:

FIG. 9F



Page Change

- Login
- Template Add
- Template Delete
- Page Add
- Page Change**
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOWAdd
- IT Only

Page Change for RNCi

Select the Page:

FIG. 9G

<ul style="list-style-type: none">LoginTemplate AddTemplate DeletePage AddPage ChangePage DeletePage ReportBlock SetupBlock ReportPage Event SetupPublish ReportPublishNOWAddIT Only	<h3>Page Change for RNCi</h3> <p>Select the Page: <input type="text" value="3danimation"/> <input type="button" value="GO GET IT!"/></p> <hr/> <p>Page name: 3danimation</p> <p>New Page Name: <input type="text"/></p> <p>New Template: <input type="text" value="Template2"/> <input type="button" value="UPDATE"/></p>
--	---

FIG. 9H



Page Delete

<ul style="list-style-type: none">LoginTemplate AddTemplate DeletePage AddPage ChangePage DeletePage ReportBlock SetupBlock ReportPage Event SetupPublish ReportPublishNOWAddIT Only	<h3>Page Delete for RNCi</h3> <p>When you delete a page, the section blocking for that page is deleted also.</p> <p>If you delete an active page, the site will generate a 404 error.</p> <p>Select the Page: <input type="text" value="3danimation"/></p> <p><input type="button" value="DELETE"/></p>
--	---

FIG. 9I



Page Report

<ul style="list-style-type: none"> Login Template Add Template Delete Page Add Page Change Page Delete Page Report Block Setup Block Report Page Event Setup Publish Report PublishNOWAdd IT Only 	<h2>Page Report for RNCi</h2> <table> <tr><td>3danimation</td><td>Template2</td></tr> <tr><td>aboutrol</td><td>Template8</td></tr> <tr><td>aboutus</td><td>Template8</td></tr> <tr><td>affiliates</td><td>Template8</td></tr> <tr><td>affiliatesonly</td><td>Template8</td></tr> <tr><td>Alacarteoptions</td><td>Template8</td></tr> <tr><td>artandentertainment</td><td>Template8</td></tr> <tr><td>article</td><td>Template2</td></tr> <tr><td>associations</td><td>Template8</td></tr> <tr><td>audiovideo</td><td>Template2</td></tr> <tr><td colspan="2">...</td></tr> <tr><td>whitepaper</td><td>Template2</td></tr> <tr><td>writenow</td><td>Template8</td></tr> <tr><td>y2k</td><td>Template2</td></tr> </table>	3danimation	Template2	aboutrol	Template8	aboutus	Template8	affiliates	Template8	affiliatesonly	Template8	Alacarteoptions	Template8	artandentertainment	Template8	article	Template2	associations	Template8	audiovideo	Template2	...		whitepaper	Template2	writenow	Template8	y2k	Template2
3danimation	Template2																												
aboutrol	Template8																												
aboutus	Template8																												
affiliates	Template8																												
affiliatesonly	Template8																												
Alacarteoptions	Template8																												
artandentertainment	Template8																												
article	Template2																												
associations	Template8																												
audiovideo	Template2																												
...																													
whitepaper	Template2																												
writenow	Template8																												
y2k	Template2																												

FIG. 9J



Block Setup


<ul style="list-style-type: none">LoginTemplate AddTemplate DeletePage AddPage ChangePage DeletePage ReportBlock SetupBlock ReportPage Event SetupPublish ReportPublishNOWAddIT Only	<h3>Block Setup for RNCi</h3> <p>Select the Page you want to setup:</p> <p>Page Name: <input type="text" value="3danimation"/></p> 
--	---

FIG. 9K

<ul style="list-style-type: none">LoginTemplate AddTemplate DeletePage AddPage ChangePage DeletePage ReportBlock SetupBlock ReportPage Event SetupPublish ReportPublishNOWAddIT Only	<h3>Block Setup for RNCiTemplate2 and 3danimation</h3> <table border="1"><thead><tr><th>Col</th><th>Block</th><th>Code*</th><th>Pub DB or Link</th><th>Section**</th><th>Part</th><th>Archive</th></tr></thead><tbody><tr><td>1</td><td>1</td><td>(none)</td><td>rncipub</td><td></td><td>2</td><td>1</td></tr><tr><td>2</td><td>1</td><td>Publish</td><td>rncipub</td><td>3danimation</td><td>2</td><td>1</td></tr></tbody></table> <p>* Required information ** Accipiter location, Image, File, Navbar, and Custom names go in Section</p> <p style="text-align: center;">← →</p>	Col	Block	Code*	Pub DB or Link	Section**	Part	Archive	1	1	(none)	rncipub		2	1	2	1	Publish	rncipub	3danimation	2	1
Col	Block	Code*	Pub DB or Link	Section**	Part	Archive																
1	1	(none)	rncipub		2	1																
2	1	Publish	rncipub	3danimation	2	1																

FIG. 9L



Block Report

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOWAdd
- IT Only

Block Report for RNCi

Page	Column	Block	Code	DB Name	Section	Part	Arc
3danimation	1	1	(none)	rncipub		2	1
3danimation	2	1	Publish	rncipub	3danimation	2	1
aboutrol	1	1	Publish	rncipub	aboutrol	2	1
aboutrol	2	1	File	rncipub	aboutrol.htm	2	1
aboutrol	2	2	Publish	rncipub	linksrol	2	1
aboutus	1	1	Publish	rncipub	whoweare	2	1
aboutus	2	1	File	rncipub	about.htm	2	1
aboutus	2	2	Publish	rncipub	links	2	1
affiliates	1	1	Publish	rncipub	affiliates	2	1
affiliates	2	1	File	rncipub	affilrol.htm	2	1
affiliates	2	2	Publish	rncipub	linksrol	2	1
affiliatesonly	1	1	Publish	rncipub	affiliatesonly	2	1
affiliatesonly	2	1	File	rncipub	contaffilrol1.htm	2	1
...							
whitepaper	1	1	Navbar	rncipub	navbar	2	1
whitepaper	2	1	Publish	rncipub	whitepaper	2	1
writenow	1	1	Publish	rncipub	writenow	2	1
writenow	2	1	File	rncipub	writeimg.htm	2	1
writenow	2	2	Publish	rncipub	linksthree	2	1
y2k	1	1	Publish	rncipub	y2k	2	1
y2k	2	1	(none)	rncipub		2	1

FIG. 9M



Page Event Setup

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOWAdd
- IT Only

Page Calendar Event Setup for RNCi

Select the Page you want to setup:

Page Name:




FIG. 9N

Page Calendar Event Setup: Bronze

There are no events listed for this page

ADD **DELETE**

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOWAdd
- IT Only

FIG. 90

<ul style="list-style-type: none">LoginTemplate AddTemplate DeletePage AddPage ChangePage DeletePage ReportBlock SetupBlock ReportPage Event SetupPublish ReportPublishNOWAddIT Only	<h3>Page Calendar Event Setup: Bronze</h3> <p>Select events from:</p> <div><input type="text"/> ▼</div> <div>GO GET IT!</div> <hr/>
--	---

FIG. 9P



Publish Report

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOWAdd
- IT Only

PublishNOW Report for RNCi

Page	Database Name	Section	Part #	Archive
3danimation	rncipub	3danimation	2	1
aboutrol	rncipub	aboutrol	2	1
aboutrol	rncipub	linksrol	2	1
aboutus	rncipub	whoweare	2	1
aboutus	rncipub	links	2	1
affiliates	rncipub	affiliates	2	1
affiliates	rncipub	linksrol	2	1
affiliatesonly	rncipub	affiliatesonly	2	1
affiliatesonly	rncipub	linksrol	2	1
Alacarteoptions	rncipub	Alacarteoptions	2	1
Alacarteoptions	rncipub	linksthree	2	1
artandentertainment	rncipub	artandentertainment	2	1
...				
webservice	rncipub	webservice	2	1
whatsnew	rncipub	currentpressteaser	2	1
whatsnew	rncipub	linksfour	2	1
whitepaper	rncipub	whitepaper	2	1
writenow	rncipub	writenow	2	1
writenow	rncipub	linksthree	2	1
y2k	rncipub	y2k	2	1

FIG. 9Q



PublishNOW Add

<ul style="list-style-type: none">LoginTemplate AddTemplate DeletePage AddPage ChangePage DeletePage ReportBlock SetupBlock ReportPage Event SetupPublish ReportPublishNOWAddIT Only	<h3>PublishNOW Add</h3> <p>This page allows you to setup one Content Group and assign sections in the PublishNOW database. The program will retrieve all of the PublishNOW sections that you have entered. A section and writer will be setup for each.</p> <p>Content group: RNCi</p> <p>Section owner: <input type="text"/></p> <p>Section password: <input type="text"/></p> <p>Email address: <input type="text"/></p> <p><input type="button" value="ADD"/></p>
--	--

FIG. 9R

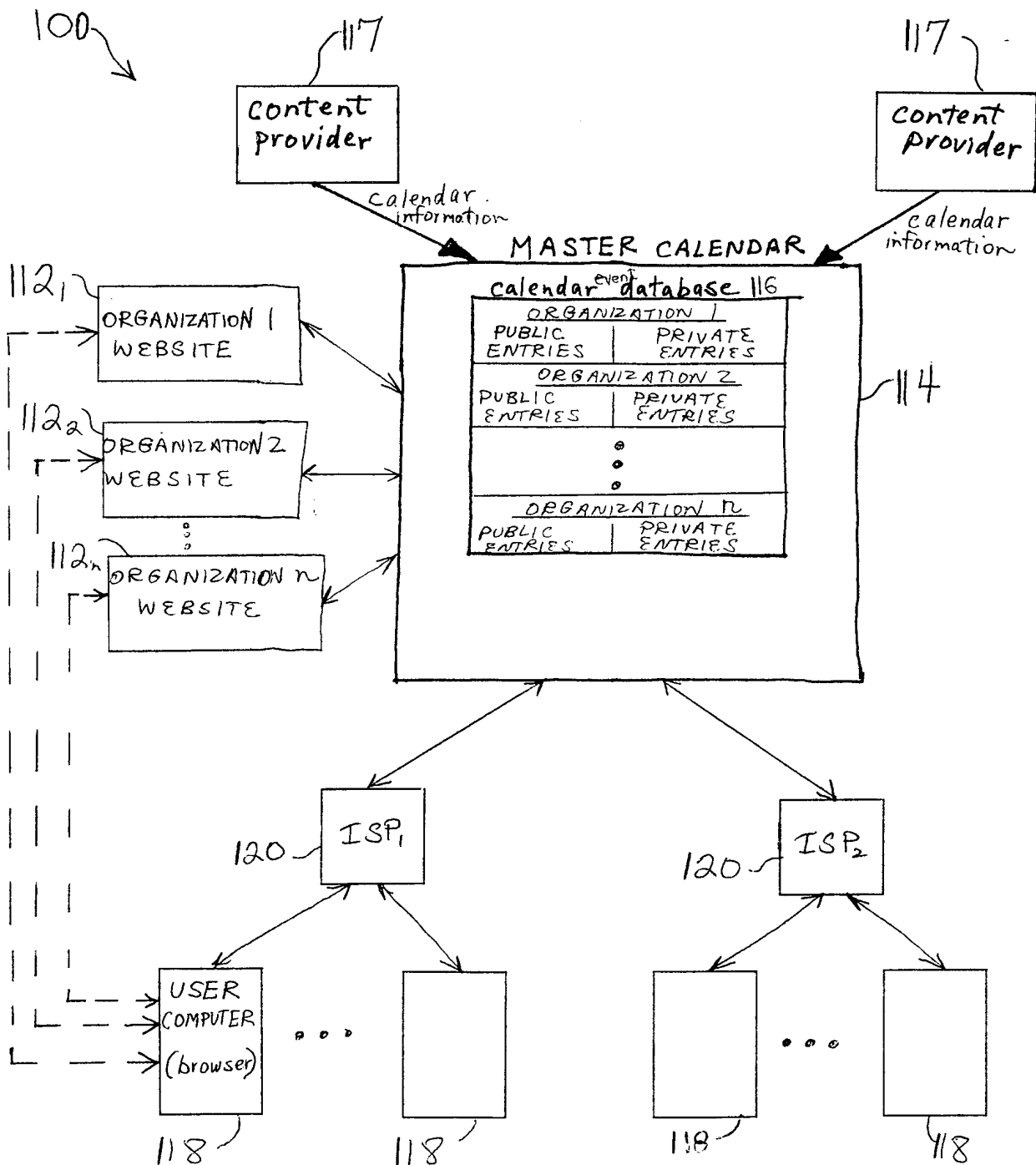


FIG. 10

CALENDAR OBJECTS

Org_Category

org_name: char(50) NOT NULL (FK)
 org_unit: varchar(50) NOT NULL (FK)
 ctgry_name: char(50) NOT NULL (FK)
 org_ctgry_name: char(50) NOT NULL

Organization

org_name: char(50) NOT NULL
 org_unit: varchar(50) NOT NULL
 org_contact_name: varchar(30) NOT NULL
 org_address1: varchar(50) NOT NULL
 org_address2: varchar(50) NULL
 org_city: varchar(30) NOT NULL
 org_state: char(2) NOT NULL
 org_zipcode: char(10) NULL
 org_phone: varchar(25) NOT NULL
 org_fax: varchar(25) NULL
 org_URL: varchar(100) NULL
 org_desc: varchar(255) NULL
 active_flg: char(1) NOT NULL
 rec_datetime: datetime NOT NULL
 rec_user_id: char(12) NOT NULL
 header_pic_name: varchar(25) NULL
 org_abbrv: char(10) NULL
 org_email: varchar(50) NOT NULL

Category

ctgry_name: char(50) NOT NULL
 active_flg: char(1) NOT NULL
 rec_datetime: datetime NOT NULL
 rec_user_id: char(12) NOT NULL

Event

event_idn: int IDENTITY
 event_name: char(50) NOT NULL
 ctgry_name: char(50) NOT NULL
 org_name: char(50) NOT NULL
 org_unit: varchar(50) NOT NULL
 loc_name: char(50) NOT NULL
 acct_idn: char(50) NOT NULL
 recur_type: char(15) NOT NULL
 event_desc: varchar(255) NOT NULL
 contact_name: varchar(30) NOT NULL
 contact_phone: varchar(25) NOT NULL
 org_ctgry_name: varchar(50) NULL
 org_loc_name: varchar(50) NULL
 ticket_order_URL: varchar(100) NULL
 admission_info: varchar(255) NULL
 directions: varchar(255) NULL
 main_event_name: char(50) NULL
 private_flg: char(1) NOT NULL
 remarks: varchar(255) NULL
 approved_by: char(12) NULL
 rec_datetime: datetime NOT NULL
 rec_user_id: char(12) NOT NULL
 recur_start_date: datetime NOT NULL
 recur_end_date: datetime NOT NULL
 contact_email: varchar(50) NOT NULL

Location

loc_name: char(50) NOT NULL
 loc_address1: varchar(50) NOT NULL
 loc_address2: varchar(50) NULL
 loc_city: varchar(30) NOT NULL
 loc_state: char(2) NOT NULL
 loc_zipcode: char(10) NULL
 loc_phone: varchar(25) NULL
 loc_URL: varchar(100) NULL
 org_name: char(50) NULL
 org_unit: varchar(50) NULL
 active_flg: char(1) NOT NULL
 rec_datetime: datetime NOT NULL
 rec_user_id: char(12) NOT NULL

Account

acct_idn: char(50) NOT NULL
 acct_name: varchar(30) NOT NULL
 acct_password: char(10) NOT NULL
 def_org_name: char(50) NOT NULL
 def_org_unit: char(50) NOT NULL
 def_ctgry_name: char(50) NULL
 def_org_ctgry_name: char(50) NULL
 def_loc_name: char(50) NULL
 def_org_loc_name: char(50) NULL
 approval_flg: char(1) NOT NULL
 active_flg: char(1) NOT NULL
 rec_datetime: datetime NOT NULL
 rec_user_id: char(12) NOT NULL
 email_address: varchar(50) NULL

Event_Calendar

event_idn: int NOT NULL (FK)
 database_name: varchar(50) NOT NULL

Recur_Event

event_idn: int NOT NULL (FK)
 event_start_date: datetime NOT NULL
 event_end_date: datetime NOT NULL

FTG 11

Example of Calendar Display

BROWSER MENU BAR AND TOOLBAR

Address: <http://mdbelh2/olcal/calendarnow/ecalendar.asp>

J F M A M J J A S O N D

September

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Click on date above to view daily events.

Starting for days

Feature:

Organization:

Location:

Keyword:

Entertainment

Sports Class/League

- YMCA and YWCA of Allentown: [Joint Venture](#) (8/24 - 12/28)
- YMCA and YWCA of Allentown: [Aqua Aerobics](#) (8/25 - 12/31)

Sports

NCC General Events

- Northampton Community College: [18th Annual NCC Foundation Golf Tournament](#) (9/28)
- Northampton Community College: [18th Annual NCC Foundation Golf Tournament](#) (9/28)

Wilson Sports

- Wilson High School: [Wilson vs. Moravian](#)

FIG. 12

Example of Calendar Detail

BROWSER MENU BAR AND TOOLBAR

Address

J F M A M J J A S O N D

September						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Click on date above to view daily events.

**18th Annual NCC Foundation
Golf Tournament**

9/28/98
11:30 AM - 5:00 PM

Sports

**Northampton Community
College**

The 18th Annual NCC Foundation Golf Tournament has arrived once again. This year it is being held at the Silver Creek Country Club. Lunch will be served at 11:30 am; Tee-Off is at 12:30 pm. There are sponsorship packages available. For reservations call 6

\$125/golfer

For more information, contact Northampton Community College at 610-861-530.

Starting for days

Feature:

Organization:

Location:

Keyword:

FIG. 13

SQL used in a Public Calendar Display

```

"SELECT " & CatField & " as CatU, " & OrgField & " as OrgU, event_start_date, " & LocField &
as LocU, event_name, event.event_idn, event_end_date, main_event_name FROM Event inner
join Recur_event on event.event_idn = Recur_event.event_idn
where event_start_date <= " & EndDate &
and event_end_date >= " & StartDate If(Category = "", "", " and " & CatField & " = " & Category
& "")
If(Org = "", "", " and " & OrgField & " = " & Org & "")
If(Location = "", "", " and " & LocField & " = " & Location & "")
and approved_by <> " "
If(Coverage <> "", "", " and Private_flg = 'N' ")
and main_event_name <> 'main'
and ( event_desc like "%" & Keyword & "%' or event_name like %" & Keyword & "%' or
main_event_name like %" & Keyword & "%' )
ORDER BY CatField, main_event_name, event_start_date

```

SQL used in a Public Event Detail

```

SELECT ctgry_name as category, org_name as OrgUnit, loc_name, org_loc_name,
event_name, main_event_name, event_desc, directions, remarks,
contact_name, contact_phone, contact_email, admission_info, ticket_order_URL
FROM Event
where event_idn = & EventID

```

FIG. 14

BROWSER MENU BAR AND TOOLBAR

Address

Add an Event for Ominus Systems

I want to add:

- ☐ a Master event, i.e. the Olympics is a master event with individual subevents
- ☐ a stand-alone event, i.e. a book signing
- ☐ a subevent under the Master event

All options allow events held for one day, a period of time, or a series of dates


NEXT 

FIG. 15

BROWSER MENU BAR AND TOOLBAR

Address: <http://mdbeth2/olcal/calendarnow/eventdate.asp>

Add a Master Event for Ominus Systems

Network Architecture Panel

☐ Do not repeat this event. The event ends on 09 28 1998

☐ Repeat this event

- ☐ Daily
- ☐ Weekly
- ☐ Every 2 weeks
- ☐ Monthly
- ☐ Every 2 months
- ☐ Yearly
- ☐ on the fourth Monday of every Month

Each repeat of this event runs for 01 day(s)

Repeat this event until 09 28 1998

FIG. 16

BROWSER MENU BAR AND TOOLBAR

Address

Add a Stand-alone Event for Lehigh University

Learning Colors: Joseph Lerner, PhD

Remarks:

Calendars the Event should appear in:

<input type="checkbox"/> Bay Area	<input type="checkbox"/> Berkshires	<input type="checkbox"/> Harrisburg
<input type="checkbox"/> Hunterdon/Warren	<input type="checkbox"/> Lehigh Valley	<input type="checkbox"/> Los Angeles
<input type="checkbox"/> Reading		

FIG. 17

Security Level Hierarchy

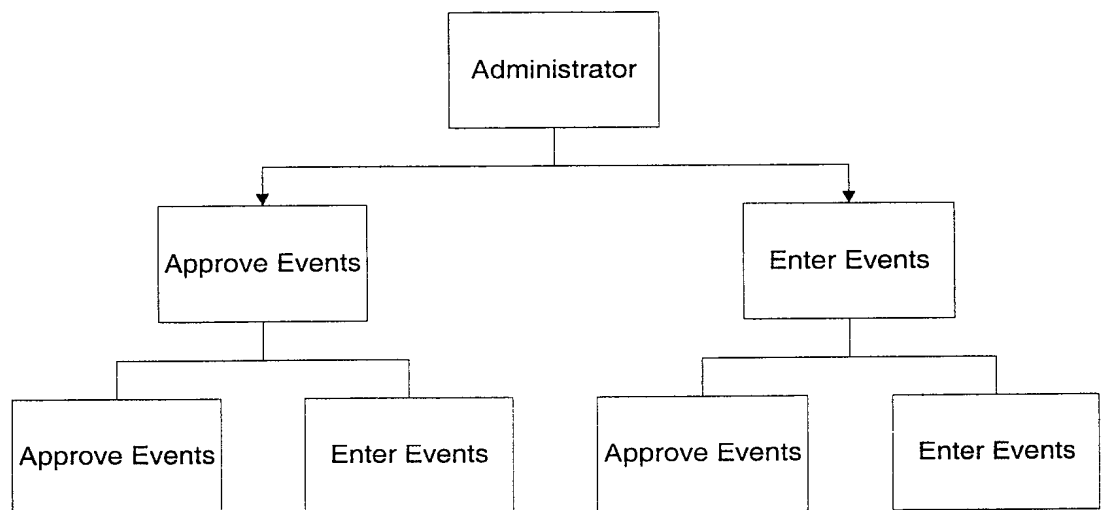


FIG. 18

BROWSER MENU BAR AND TOOLBAR

Address: <http://rndbeth2/rolcal/calendarnow/accountlist.asp>

User Accounts by Organization

Organization	Admin ID	User ID	Name	Active?
A.C. Moore Lehigh University		rbrown	Dr. Robert Brown	Y
		hd	Harley-Davidson	Y
		art	Art Smith	Y
	baron		baron	Y
		bart	Bart Starr	Y
	dgaul		Donna Gaul	Y
	engineer		Engineering Admin	Y
		frank	Frank Lee	Y
		herc	hercules	Y
		jcolson	Jay Colson	Y
		john	John Wetzel	Y
		johnw	johnw	Y
		jwetzel	John E. Wetzel	Y
	kenny		Kenny Yu the COM King	Y
	lehigh		Lehigh Admin	Y
		lehigh1	steve	Y

FIG. 19

BROWSER MENU BAR AND TOOLBAR

Address

Update an Account

Account Name:

User ID: jwetzel
User's full name: John E. Wetzel
User's Organization: Lehigh University

Email Address:

New Password:

Active Flag:

Should this user be granted Administrative privileges? ☐ Yes ☒ No

FIG. 20

BROWSER MENU BAR AND TOOLBAR

Address: <http://indbeth2/olcal/calendarnow/pending.asp>

Process Pending Events

Please verify the event information and click the ADD button to post to the database.

This event is posted under the Series or Main Event: main

Event Name: Network Architecture Panel

Start Date: 9/28/1998
End Date: 10/31/1998
Event Occurs: Weekly
Event Duration: 1 days
Repeat Until: 10/31/1998

Start Time: 6:00 PM
End Time: 9:00 PM

Description: Leaders in network and security architectures will discuss the latest break-thrus in firewalls and encryption techniques. Case studies will ...

FIG. 21

BROWSER MENU BAR AND TOOLBAR

Address

Add an Organization

Organization Name*:

Contact Name*: Email:

Organization Address:

Street1*:

Street2:

City/State/Zip*: AK

Phone*: Fax:

Internet Address:

Organization Description:

* Required information

FIG. 22



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : G06F 17/30	A3	(11) International Publication Number: WO 00/20945 (43) International Publication Date: 13 April 2000 (13.04.00)
(21) International Application Number: PCT/US99/23116 (22) International Filing Date: 6 October 1999 (06.10.99) (30) Priority Data: 60/103,282 6 October 1998 (06.10.98) US 60/103,293 6 October 1998 (06.10.98) US (71) Applicant: REGIONAL NETWORK COMMUNICATIONS, INC. [US/US]; Suite 300, 190 Brodhead Road, Bethlehem, PA 18017 (US). (72) Inventors: YEE, Kenneth, C.; 7445 Driftwood Road, Northampton, PA 18067 (US). GAUL, Donna, F.; 6426 Constitution Road, Schnecksville, PA 18078 (US). YU, Kun; 16901 Napa Street, #235, North Hills, CA 91343 (US). MARTIN, Richard, D.; 1719 Falcon Drive, Bethlehem, PA 18017 (US). YEE, Susan, C.; 4646 Virginia Drive, Bethlehem, PA 18017 (US). WETZEL, John, E.; 2720 Whitetail Deer Road, Bath, PA 18014 (US). COLSON, Jay, H.; 4215 Jacksonville Road, Bethlehem, PA 18017 (US). (74) Agents: JABLON, Clark, A. et al.; Akin, Gump, Strauss, Hauer & Feld, L.L.P., One Commerce Square, Suite 2200, 2005 Market Street, Philadelphia, PA 19103-7086 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> (88) Date of publication of the international search report: 17 August 2000 (17.08.00)

(54) Title: GENERALIZED MULTI-INTERFACED EXTENSIBLE CONTENT MANAGEMENT AND DELIVERY SYSTEM, AND ON-LINE CALENDAR

BROWSER MENU BAR AND TOOLBAR

Address: <http://mdbeth2/olcal/calendarnow/pending.asp>

Process Pending Events

Please verify the event information and click the ADD button to post to the database.

This event is posted under the Series or Main Event: main

Event Name: Network Architecture Panel

Start Date: 9/28/1998
 End Date: 10/31/1998
 Event Occurs: Weekly
 Event Duration: 1 days
 Repeat Until: 10/31/1998

Start Time: 6:00 PM
 End Time: 9:00 PM

Description: Leaders in network and security architectures will discuss the latest break-thrus in firewalls and encryption techniques. Case studies will ...

(57) Abstract

A content management system allows users to post information into pre-authorized areas of public and private internet and intranet web sites. An automated computer-implemented on-line calendar system posts event information associated with a plurality of entities. Each entity has its own calendar. A calendar event database accepts event entry calendar input information from a plurality of content providers and stores the event entries. Each event entry is associated with one or more entities specified by the content provider. A calendar assembler generates calendars of events for each of the entities using the information stored in the calendar event database. The event entries include private entries which appear only on the calendar of an entity predesignated by the content provider and public entries which are available for viewing by any entity calendar.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/23116**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : G06F 17/30

US CL : 707/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 707/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WEST, EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y, P --- A	US 5,819,271 A (MAHONEY ET AL) 06 OCTOBER 1998, SEE ENTIRE DOCUMENT.	1-13 ----- 14-19
Y, P --- A	US 5,864,871 A (KITAIN ET AL) 26 JANUARY 1999, SEE ENTIRE DOCUMENT.	1-13 ----- 14-19
Y, P --- A	US 5,857,181 A (AUGENBRAUN ET AL) 05 JANUARY 1999, SEE ENTIRE DOCUMENT.	1-13 ----- 14-19

☐ Further documents are listed in the continuation of Box C.
☐ See patent family annex.

* "A"	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier document published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"A"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

10 MARCH 2000

Date of mailing of the international search report

02 MAY 2000

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

ALVIN OBERLEY

Telephone No. (703) 305-9716

Joni Hill

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 April 2000 (13.04.2000)

PCT

(10) International Publication Number
WO 00/20945 A3

(51) International Patent Classification⁷: **G06F 17/30**

(21) International Application Number: PCT/US99/23116

(22) International Filing Date: 6 October 1999 (06.10.1999)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/103,282 6 October 1998 (06.10.1998) US
60/103,293 6 October 1998 (06.10.1998) US

(71) Applicant: **REGIONAL NETWORK COMMUNICATIONS, INC.** [US/US]; Suite 300, 190 Brodhead Road, Bethlehem, PA 18017 (US).

(72) Inventors: **YEE, Kenneth, C.**; 7445 Driftwood Road, Northampton, PA 18067 (US). **GAUL, Donna, F.**; 6426 Constitution Road, Schnecksville, PA 18078 (US). **YU,**

Kun; 16901 Napa Street, #235, North Hills, CA 91343 (US). **MARTIN, Richard, D.**; 1719 Falcon Drive, Bethlehem, PA 18017 (US). **YEE, Susan, C.**; 4646 Virginia Drive, Bethlehem, PA 18017 (US). **WETZEL, John, E.**; 2720 Whitetail Deer Road, Bath, PA 18014 (US). **COLSON, Jay, H.**; 4215 Jacksonville Road, Bethlehem, PA 18017 (US).

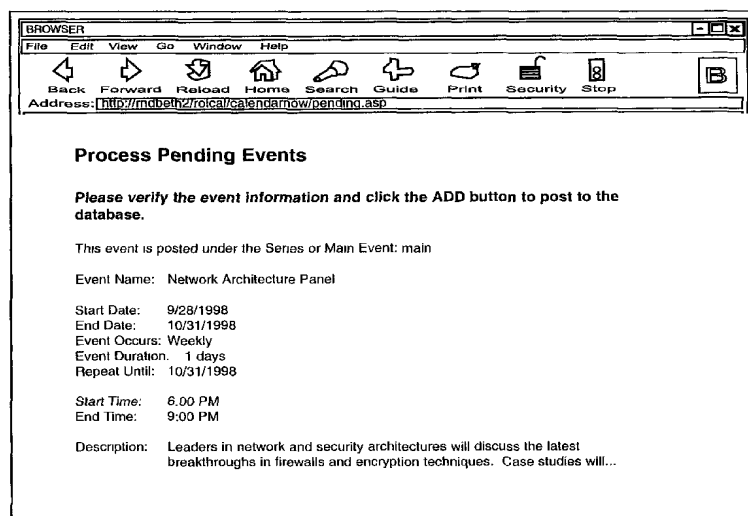
(74) Agents: **JABLON, Clark, A.** et al.; Akin, Gump, Strauss, Hauer & Feld, L.L.P., One Commerce Square, Suite 2200, 2005 Market Street, Philadelphia, PA 19103-7086 (US).

(81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent

[Continued on next page]

(54) Title: GENERALIZED MULTI-INTERFACED EXTENSIBLE CONTENT MANAGEMENT AND DELIVERY SYSTEM, AND ON-LINE CALENDAR



(57) Abstract: A content management system allows users to post information into pre-authorized areas of public and private internet and intranet web sites. An automated computer-implemented on-line calendar system posts event information associated with a plurality of entities. Each entity has its own calendar. A calendar event database accepts event entry calendar input information from a plurality of content providers and stores the event entries. Each event entry is associated with one or more entities specified by the content provider. A calendar assembler generates calendars of events for each of the entities using the information stored in the calendar event database. The event entries include private entries which appear only on the calendar of an entity predesignated by the content provider and public entries which are available for viewing by any entity calendar.



WO 00/20945 A3



(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— *With international search report.*

(88) Date of publication of the international search report:

17 August 2000

(48) Date of publication of this corrected version:

8 March 2001

(15) Information about Correction:

see PCT Gazette No. 10/2001 of 8 March 2001, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

TITLE OF THE INVENTION

GENERALIZED MULTI-INTERFACED EXTENSIBLE CONTENT
MANAGEMENT AND DELIVERY SYSTEM, AND ON-LINE CALENDAR

BACKGROUND OF THE INVENTION

5 The present invention is directed to a multi-organization web content management system and a web-based on-line calendar system.

BACKGROUND TO WEB CONTENT MANAGEMENT SYSTEM

10 The present invention establishes the mechanism, the framework, the interfaces and ancillary methodology that allow multiple content creators to submit content, enable content managers to manage and expand their categories independently, facilitate the retrieval and manipulation of contents from multiple categories and merge them into a
15 media form by the content consumer, and automate the processes where warranted.

 Content management involves submission by creators, collection, editing, and processing by managers and re-distribution to consumers. An example of such a
20 system is the operation of a newspaper. A more advanced example is a web site where feeds from various sources are collected and re-assembled for viewing on a browser.

A conventional static Web site consists of pages containing information units. Anchors embedded in the unit are used to link to logically subsequent units on other pages. A site map can show all the pages and the links among them. Tools abound to facilitate the production of such Web sites, from textual HTML editors to visual page designer like NetObjects Fusion. Programs like LinkBot exist to validate the links among pages; even so, broken links are commonplace on the Web given the inter-relationship among the pages.

This conventional Web site concept becomes merely a shell to an advanced dynamic and interactive site. At the core of such a site are one or more application programs that present the viewer information or functionality on demand. The pages serve as the user interface of the programs. It is not far-fetched to have an entire spreadsheet program running on the Web; Web-based Quattro Pro is available from Corel.

The Web publishing tools available on the market can be divided into two categories: site-centric and page-centric and are all based on the conventional page-and-link structure. They generally facilitate the creation of whole sites or whole pages. Microsoft FrontPage and Net Object Fusion are two examples of the page-centric approach. A leading content publishing package, StoryServer by Vignet, attempts to control the entire site, leaving the site manager little flexibility, resulting in monotonous site designs (see www.news.com, www.cnet.com). None of these products treat web sites as a componentized dynamic system where the content is isolated and treated independent of the web page to submit content for Web publication layout.

Accordingly, there is a need for a system which:
unifies the collection-processing-storage-distribution model
across multiple platforms; establishes the mechanisms,
interfaces and methodology for the efficient and secure flow
of content from the creator to the consumer; allows multiple
content contributors; enables content section managers to
manage their sections independently; facilitates the site
manager to retrieve and place contents from multiple
sections and merge them into a site; automates the update of
Web content; and enables the syndication of user content to
multiple web sites. The present invention fulfills such
needs.

BACKGROUND TO ON-LINE CALENDAR

On-line calendars allow multiple users to remotely
and simultaneously maintain and access a shared calendar
database. One conventional approach is to allow access to
such calendars via an Internet browser and an Internet
Service Provider (ISP). However, if a user wishes to access
a plurality of different calendars from different
organizations, the user must separately access different web
sites. Likewise, if the user wishes to post the event to
plural calendars, each calendar must be individually
accessed to add the event. As more personal and
organizational calendars become managed on-line via
intranets, wide area networks, the Internet, and the like,
the problem of calendar management grows exponentially.

Accordingly, there is a need for an on-line
calendar system which can effectively and efficiently manage
calendar data from plural businesses, organizations, and the
like. The present invention fulfills such a need.

BRIEF SUMMARY OF THE PRESENT INVENTION

SUMMARY OF WEB CONTENT MANAGEMENT SYSTEM

5 The present invention isolates Web site management into three distinct elements: site layout, content creation and content placement. It therefore delegates the separated responsibilities to respective individuals. A visually unified site is substantially divided into sub-sites, or sections, independently maintained by the section managers. As a set of Web content management tools, the present invention is useful for a large corporate site, a community site or a site which enables the sharing of content data across Web sites. Any content-rich site, such as newspaper sites, will find the present invention very helpful.

15 The present invention may be used in a complementary manner with MS FrontPage to do what FrontPage does not. FrontPage's editing capability may be used to allow content creator to copy materials edited in FrontPage into the content database of the present invention.

20 As its name suggests, the present invention does content management. Content mainly refers to textual and graphical information, also referred to herein as electronic digital assets or data. The present invention does not perform visual layout, which is best done with abundance of other programs. In this sense, the present invention is a post-design content management system. Interaction with layout design, however, is beneficial and will simplify design work.

30 The present invention may be used with any programming or scripting language, Cold Fusion, ASP, C++, Visual Basic or Perl. The present invention may serve as an

extension, or add-on component to web development platforms such as Cold Fusion and Active Server Pages. The present invention may also serve as a tool set for CGI and ISAPI programming.

5 The present invention may be used any site that can access Component Object Model (COM) objects. It can be used from within Cold Fusion, ASP, or CGI programs. It is intended to be programming language neutral through the use of COM-DLL, servletes, and Java features.

10 For the client using the Web site as a publication platform, the objectives of the present invention include at least the following goals:

1. To reduce or eliminate the need to manipulate Web site layout.

15 2. To deliver the power of the Web as a publishing channel to the hands of the content creator.

For the site manager, the objectives of the present invention include at least the following goals:

20 1. To modularize a Web site into replaceable selectable components, the objectives of the present invention include at least the following goals;;

2. To decentralize the management of a Web site of diverse content types by separating content and form and distributing the control out content;

25 3. To streamline the publication of daily content and expansion of content areas; and

4. To facilitate the input, administration and

presentation of Web content access across various electronic outlets.

SUMMARY OF ON-LINE CALENDAR

5 An automated, computer-implemented on-line
calendar system is provided which posts event information
associated with a plurality of entities. Each entity has
its own calendar. Depending upon the implementation, each
entity also has an apportionment of a large calendar
10 database, or its own database. The system includes a
calendar database and a calendar assembler. The calendar
event database accepts event entry calendar input
information from a plurality of content providers and stores
the event entries. Each event entry is associated with one
or more entities specified by the content provider. Event
15 entries may specify a plurality of entities for posting.
The calendar assembler generates calendars of events for
each of the entities using the information stored in the
calendar event database. The same event entry may appear on
calendars of a plurality of entities if specified by the
20 calendar event database. The event entries include private
entries which appear only on the calendar of an entity
predesignated by the content provider. Event entries which
are not designated as private entries are treated as public
entries and are available for viewing by any entity
25 calendar.

BRIEF DESCRIPTION OF THE DRAWINGS

30 The following detailed description of preferred
embodiments of the present invention would be better
understood when read in conjunction with the appended
drawings. For the purpose of illustrating the present
invention, there is shown in the drawings embodiments which

are presently preferred. However, the present invention is not limited to the precise arrangements and instrumentalities shown. In the drawings:

5 Fig. 1 shows a content management database in accordance with the present invention;

Fig. 2 shows a sample system configuration for implementing an electronic video shop using the content management system of the present invention;

10 Fig. 3A shows the interconnections between the major elements of the content management system;

Fig. 3B shows details of the content management database associated with the content management system;

Fig. 4 shows sample end products created by the content management system;

15 Fig. 5 is a screen shot from a web browser-based interface which illustrates the hierarchical structure, as well as the functions implemented at each level of the content management system;

20 Figs. 6A-9R show sample screen shots for one commercialized implementation of the present invention in the form of a web content management product.

25 Fig. 10 shows one embodiment of a system for managing the on-line calendar in accordance with the present invention, and shows the interconnections between the major elements;

Fig. 11 shows the database structure, including the objects, used for the on-line calendar; and

Figs. 12-22 show sample screen shots for one preferred embodiment of the present invention in the form of a web content management product.

DETAILED DESCRIPTION OF THE INVENTION

5 Certain terminology is used herein for convenience only and is not to be taken as a limitation on the present invention. In the drawings, the same reference letters are employed for designating the same elements throughout the several figures.

10 DETAILED DESCRIPTION OF WEB CONTENT MANAGEMENT SYSTEM

A. DEFINITIONS

 Content: any textual, visual and audio materials, or the combination thereof, including animated images, video
15 and audio materials. In a broader sense, the term content covers the categorization of the actual content.

 Content consumer: a person or a device that retrieves the content from storage for consumption, including web site, printing process, electronic mail
20 system.

 Content consumption: reading, viewing, hearing or redistribution of the content.

B. OVERVIEW OF PRESENT INVENTION

STRUCTURE OF WEB SITES FOR USE WITH THE PRESENT INVENTION

25 Content management should cover multiple web sites such that the contents can be efficiently shared among sites. At the top of the structure is a web, managed by a

webmaster. The content management system supplies content units in the form of wrapped modules. Therefore, contents are independent of the sites while the sites are reliant on the content system.

5 Ideally, a content module would have one calling interface and be located at a site-independent URL. Consider, for example, the following URL's:

1. <http://www.regiononline.com/guild?site=Rest&Phone=1234567>
2. <http://www.regiononline.cm/calendar?site=2&date=4-30-98&class=2>
- 10 3. <http://www.regiononline.com/guides?site=1§ion=edit&type=current>
4. <http://www.regiononline.com/images/header/header1.gif>

In this way, it is possible to eliminate the redundancy of files and folders, simplify site management and enhance the efficiency and performance of the server.

15 Physically, a site consists of "templates." A template is a mold for Web "pages." The template generates pages when given different "parameters." The template defines the layout of the resultant pages while the code and parameters determine the content of the output.

20 To a viewer, a Web site consist of pages, sewn together with anchors and links, in the form of hypertext markup language (HTML).

To a site manager, a site consist of templates in the form of files.

25 In terms of content, a Web site consists of "zones," which have "sections" under them. Zones and

sections are logical content units, rather than placement descriptions. A zone may not be a visual box on a web page; it may span multiple pages; sections in one zone may not appear together. A section may span multiple templates or pages. A section contains *articles* that can be split into "parts." Articles of a section usually need to be presented in parallel. For example, "Local News" can be a zone, while "Bethlehem News" can be a section, which can have five stories for a day. Part 1's, or the titles of the stories, can be shown as a list. Clicking on one of the list items leads to the detailed story, which can be on a subsequent template.

A part can have a content, an anchor and an image. The content can be pasted in or uploaded as a file.

Splitting an article into parts enables presenting a long article in multiple pages and attaching multiple images to an article. It also gives the contributor flexibility in handling the look and page transition of an article.

Besides an image that can be attached to a part of an article, an article can have a "lead image," which usually is needed in front of the title.

DIVISION OF RESPONSIBILITIES (generally)

The site manager controls the physical placement by placing the code that retrieves the content of a section where it is desired to appear. The site manager can place one or more sections in a table cell or in a frame. The site manager does not decide on the content of a section. The site manager's responsibilities are layout, which is usually prefabricated, and placement.

A Webmaster oversees the site managers and the

zone manages and sets up their user accounts. The Webmaster decides on the server folder, URL mapping, etc. for the sites. The Webmaster also sets up folder to store documents, images and templates that are shared across sites.

The zone manager's role is administrative and includes defining sections within a zone and setting up section manager accounts. The section manager oversees the content contributors and assures that the content and appearance of the materials submitted by the contributors are appropriate. All new articles submitted to a section are subject to the approval of the section manager.

The terms webmaster, site manager, zone manager and section manager pertain to the roles, rather than the personalities. There could be one person taking all the roles, or the roles could be delegated to different individuals. The division of responsibilities makes it possible for a team to split the roles and collaborate.

A portion of a section that appears on a template is a part of the section. The parts of a section are logically layered, in that a click on part 1 leads to part 2, much like the pages of a book. An example of a section is Ted's Place on Region OnLine (ROL). Part 1 of Ted's Place section is on home.cfm, which leads of part 2 on Content/tedplace/tedarch1.cfm. The complete article is part 3 on content/tedplace/date.cfm. Although the articles are present and stored in separate files now, with the use of a database, they can be accessed from one template. Therefore, Ted's Place section may have 3 parts.

It is advantageous to deem Ted's section a module,

with Ted responsible for its content and the site manager for its placement. A section manager can pre-approve the content of a contributor. It is desirable for Ted to have a simple interface to edit, update and archive the articles of his section and for the site manager to be able to place the parts of Ted's section on the templates in an easy way.

Ted will have to know that his articles consist of 3 parts. Each part has its content and some ancillary properties, such as an anchor and an image. He does not know where exactly the parts are placed. He just edits the content and properties of the parts in a table.

The site manager places the parts by Ted as objects. If the manager uses Cold Fusion, the following code is used to put part 3 of Ted's Place where it is desired to appear.

```
<CFOUPUT>#Section.Output("TedPlace")</CFOUTPUT>
```

PROGRAMMING LOGIC

Components:

1. User Interfaces: content input, administration tasks
2. Database: save information on security and content
3. Transfer: access host through HTTP, display content in built-in browser
4. Server Object: enable the serve to interact with the database content; implemented in COM, it makes the present invention programming language-independent

5. Security mechanism

6. Correspondence system

THE DATABASE DESIGN AND ACCESS METHODS

5 The database design handles all article types in any number of parts. The type of databases to be used is not restricted. With Active Data Object as the access method, we can access over one hundred databases, including MS Access, MS SQL Server, Oracle, and all ODBC data sources.

SECURITY CONSIDERATIONS

10 Security is implemented at all levels. The database is stored on the server and checks the user logon and presents the current user a temporary key to access the section he or she is authorized to work on. When the current user is finished, the temporary key is destroyed.

15 STATICIZING THE PRESENTATION UNIT

The object model of article and part makes it possible to staticize a presentation unit. When the object outputs the content from a query, it can write the results to a local file on the server. The next time the same
20 content is requested, the query need not be executed. A scheme is needed to generate file names unique to a query. The staticized content is cached in a file named SectionyymmddHHAAPP.htm.

DYNAMIC LINKS

25 In order to give the server manager full control over the placement of the parts, the links between the parts to a section are not hard-coded by the content creator who

does not know the exact placement. However, supply parameters to the links are provided such that the server manager can build a link that points to a specific content unit. For example, Ted would put <Click here for more> for the
5 server manager to build a link.

THE NOTIFICATION SYSTEM

When a contributor submits an article, the section manager is notified by e-mail. When the section manager approves/deletes/criticizes an article, the author is
10 notified.

SYSTEM REQUIREMENTS

The client interface is browser-based. No special hardware or software is required. The client needs Internet access, dial-up or whatever, and a browser.

15 In one preferred embodiment of the present invention, the server component requires Windows 95/NT and web server, Microsoft Data Access Components, a scripting or programming environment to call COM objects. One embodiment of the present invention is implemented with Cold Fusion.
20 Another embodiment uses ASP calls to the database.

DIVISION OF RESPONSIBILITIES (detailed lists)

Web Master:

1. Set up a Web root directory, name and password and specify an SMTP server for use by the notification system.
- 25 2. Set up web site managers, allot a server folder for a site.

3. Set up zone managers.

Site manager:

1. Edit templates for a site, place sections on the templates.

5 2. Adopt new templates.

Zone manager:

1. Set up section managers.

2. Create new sections.

Section manager:

10 1. Set up content writers.

2. Approve the content submitted by the writers. The Section Manager may send comment to the writer or delete the article.

Content writers:

15 1. Compose web content in his or her favorite editing environment, decide on the content and appearance of the articles.

2. Upload the article to the server.

20 When a section manager uses his or her password to enter a particular section, the articles in the section become accessible. The Section Manager can add an article or pick an existing article from a list to modify. The Section Manager logs out when he or she is done with the article.

The site manager uses a few lines of code to extract the content that the content creator has submitted. Generally the site manager needs to specify the section and a display mode. If the site manager specifies a display of part 1 and more than one article is available, there will be a list of part 1's. The anchors are automatically built such that a click on part 1 leads to part 2 of the article. The content appears wherever the code is put in a table cell or a frame. In other words, the present invention handles the output of content and the navigational links between the content units.

For example, the site manager may use a simple command: <% .getContent(SectionID, ArticleID, PartID, NumberOfArticles %>

to retrieve the content of a section, where:

SectionID is the name of the section;

ArticleID is usually programmatically supplied. If set to zero, the latest are retrieved;

PartID specifies either the header or body; and

NumberOf Articles: Zero means all current ones, 1 means the latest one, etc.

USER KNOWLEDGE REQUIREMENTS

A content contributor needs to know how to type plain text. Special characters are automatically converted into HTML format. If a word processor is used to generate an HTML file and upload the file, the content contributor must know where the file is located. Alternatively, the content contributor needs to know how to use a word-processor.

The web server needs something to read CGI parameters. CGI programming or server-side scripting tool, such as Cold Fusion, ASP, are sufficient for this purpose.

5 The site manager needs to understand what this system does and the sample implementations. The site manager does not need to do any coding.

Graphical designers need to understand the concept of templates and pages, and they need to make fewer replicates of their designs.

10 C. DETAILED DESCRIPTION

STRUCTURE OF THE CATEGORIES

15 The basis for content management is the categorical division of the content. Content may be divided into hierarchical categories. A news organization, for example, may categorize the news content into "sports", "business", etc. Each category is a collection of subcategories, such as "sports>swimming", and a sub-category is a collection of sub-subcategories, "sports>swimming>free style", and so on. There is no limit to the number of levels to the hierarchy, but each branch should be unique.

20 One way for managing such a hierarchy is using a relational database, such as an ANSI SQL database. The information on the categories can be stored in data tables while the database maintains the relationships among the units. Another way for managing such a hierarchy is using an object-oriented or hierarchical database, such as the registry of Windows-NT.

25 The ways cited above for managing the hierarchy are the choice of the person implementing the system. The

implementation person may choose another means, or devise one of his or her own, to maintain the categorical structure. The present invention is directed to concerns about the functionality of such a structure that is outlined
5 as follows:

1. Each category may contain contents or "items".

2. Each category may contain subcategories, which in turn, are referred to as categories. Thus, a category may be main category with or without subcategories in one structure; a
10 category may be a subcategory in another structure; or a category may be a sub-subcategory in another structure. The individual web site designer decides how to arrange the category structures.

3. Each category may be assigned to distinct individuals
15 or "contributors" to maintain.

4. The existence of a category depends on the category immediately above it.

5. A manager of a category has control over the categories under it.

20 6. A category may contain actual contents or pointers to, or addresses of, contents.

7. Each category and each content unit are uniquely identifiable.

Fig. 1 illustrates a content management database
25 10 organized in a category-type format. Note that in category 3, one of the contents is a pointer to a web site.

This taxonomic structure for content

classification is capable of handling any and all systems of natural relationships. Therefore, the categorization system can be considered a model for the content body.

5 The present invention achieves the implementation of the functionality of such a structure with the use of object-oriented databases, relational databases, computer file systems, computer network protocols and the combinations or hybridization thereof.

10 INTERFACES THAT FACILITATE THE CREATION
AND MAINTENANCE OF THE CATEGORIZATION

15 For the content managers, interfaces are devised for the creation and maintenance of such a taxonomic structure. As far as computer software is concerned, such interfaces can be designed in the form of application programming interfaces (API's), which allow the addition, deletion and setting the properties of categories, and which can be accessed with a programming or scripting language.

INTERFACES THAT ALLOW COLLECTION,
MAINTENANCE AND DELIVERY OF CONTENT

20 For the content creators, managers and consumers, interfaces are designed for content collection, maintenance and retrieval.

END USER INTERFACES

25 The end user interfaces can be implemented desktop computer applications, web browser applications, or any other device that can take user selection and present the content.

STATICIZING MECHANISM

Although the content presentation is dynamic and in response to users' requests, the variations in the requests are limited and the same requests are often repeated. Staticizing provides content dynamics on an "as needed" basis. The bottleneck for the speed of content delivery, as far as the server is concerned, is usually the database search and content processing. When the server receives a request, it is converted into a set of search criteria and a search is conducted by the database. The records found are processed and merged into a format, such as HTML, that is suitable for consumption. Two ways are used to speed this process:

1. Partial response caching. The requests are processed into unique identities and related to the final content units ready to be delivered. When the same request is received, no search and process is needed and the cached content is served out.

2. Full response caching. The fully assembled response, such as a front page of a web site, is cached so that majority of the processing time is saved.

SECURITY AND AUTHENTICATION

Security is implemented at all levels. Only authorized identity can access certain categories or functionality. The authorization can be based on organizational or corporate designation, or on financial transactions, e.g., payment received.

EXAMPLE IMPLEMENTATIONS

1. An Electronic Video Shop

The video shop divides its content materials into

categories such as Comic, Action, etc. A manager is assigned to a category. The present invention allows the category manager to retrieve video content materials from sources (content creators, such as Universal Studio) and place them under his or her category in a way that is described in the following pseudo-code:

```
Invention.DepositVideo(Category:=Action, Source:=US,
SourceLocation:=name/Password@ftp.US.com://newRelease/ArnoldSchwartzneger1234
5, Description:=best Ever)
```

The present invention builds interfaces for the end user to search for content in the content collection by various criteria. Upon the user selection, a device, or a program, will request the specific content to be sent to the user in a way that is described in the following pseudo-code:

```
Invention.DeliverVideo(title:=USnewAS12345, authenticated:=Yes,
Mode:=HighResolution)
```

Fig. 2 shows a sample system configuration for implementing the electronic video shop. The entered search may include one or more keywords, categories, or combinations of keywords and categories. In Fig. 2, a web browser 16 accepts a search input query which is routed by an ISP 18 to an interface 20 connected to the content management database 10 and the content database 14. A search engine 22 uses the user's search input query to search the content database 14.

2. A Web Content Management System

This system enables the collection of content from

various sources, such as newspaper and magazine content systems, individually written articles, and the placement of content units on designated Web sites. It divides the content into levels of categories and assigns an owner to each category who has control over the content in his or her category. Multiple content creator, or writer, can be assigned to a category. The interfaces of the system facilitate the submission of content materials from various sources. For example, a desktop computer application is compiled to help a writer fill in the category name, user name, pass word, article header, etc. A visual what-you-see-is-what-you-get editing environment is incorporated in the application such that the writer needs not to know any more than ordinary composition. The communication protocols are built in the system such that the content can be transferred from the creator to a server and is processed and stored in appropriate databases or file structures. The manager of the category will then have the chance to examine the new content and decide whether it will be published. Once approved, the consumer can access the content in a presentation that is suitable for consumption on his or her device of choice, such as a computer program, a television set.

For efficient storage and retrieval for web distribution, textual content is stored in HTML (hypertext markup language) or XML (extensible markup language) and multimedia content in its native format.

Fig. 5 is a screen shot from a Web browser-based interface which illustrates the hierarchical structure as well as the functions implemented at each level of the web content management system.

Figs. 3A, 3B and 4 illustrate one embodiment of a web content management system in accordance with the present invention. Fig. 3A shows the interconnections between the major elements, Fig. 3B shows details of the content management database 10 used in Fig. 3A, and Fig. 4 shows sample end products as viewed at an end user interface, such as a browser. These figures illustrate how the present invention allows the contents of a single category to appear in a plurality of unrelated web sites 24 (labeled as 1-n), each of which may have completely different page layouts. The same categories and their content may thus be automatically populated in multiple web sites. The "contributors" of Fig. 1 are equivalent to the content providers 12 of Fig. 3A.

Referring to Figs. 3A and 3B, a central site or a plurality of distributed sites includes a content database 14 for storing the content, and a content management database 10 for storing instructions regarding how the content is used and managed. A plurality of content providers 12 (labeled as A-Z) transmit content to locations in the content database 14. In one scheme, each content provider 12 is permitted to submit content to one or more preselected content numbers. There is a content number for each category item shown in Fig. 1. For example, content 1 may be item 1 of category 1; content 2 may be item 2 of category 1; content 3 may be item 1 of category 2, subcategory 1, and so on. Passwords and other appropriate security measures are used to ensure that content is received only from the predesignated provider. To facilitate illustration of the present invention, the content management database 10 is shown in Fig. 3B as an index of categories and the web site location at one or more web sites where the content (items) should appear.

5 The content provider 12 does not create the content management database 10. Instead, individual web site personnel and/or their authorized entities, set up and maintain the information in the content management database 10.

10 Referring to Figs. 3A, 3B and 4, consider the home page 26 of Site 1 which is arranged with five categories. Categories 1, 3 and 4 each have two hypertext-linked items identified with a headline or teaser line (article header). Category 2 has two hypertext-linked subcategories. Category 15 5 is a single graphic item. The headline of the items in contents 1, 3 and 4 appear in their respective locations of the Site 1 homepage 26, and the full-text or full version of the items appear at the respective web site addresses shown in Fig. 3B. For example, the full version of item 2 of category 4 appears at: site1.com/category4/item2, as shown in Fig. 4.

20 Home page 28 of Site 2 is arranged with categories 1 and 2. The physical layout of category information may be different in sites 1 and 2, depending upon the formatting/layout of the sites and the number of different categories. Since category 2 has two subcategories, the home page lists the two subcategories as hypertext links. Clicking on a subcategory link brings up a web page of 25 subcategory items. Clicking on the items brings up the full versions of the item contents. Fig. 4 shows an example for viewing subcategory 1, item 1. Site 2 does not have categories 3-5.

30 In the example shown in Fig. 3B, site6.com (not shown in the figures) includes categories 3 and 5, but not categories 1, 2 and 5.

In the web page structure shown in Fig. 3B, the full version of content, as well as the clickable subcategory listings, are located on separate web pages and are not part of the front page web page. In an alternative web page structure, the full version of content appears on the same web page as the front page. For example, referring to Fig. 4, the item 2 full content may be located at the following address: site1.com/frontpage?category=4&item=2

The alternative structure uses less pages and thus is more efficient, especially for a web site with a large number of branches.

As illustrated by this example, the same categories, (and thus, the same content items), may be automatically populated in a plurality of different web sites. In this example, when submitting the content, the content provider 12 must indicate which portion of the content is the headline and which portion is the full version. A summary of the content may also be provided if the web sites have separate locations or pages for content summaries. If the content of a category is subsequently changed and the change is approved by the site manager, the new content replaces the old content in each of the respective web sites.

As discussed above, a manager or administrator is assigned to each category for examining newly submitted content and deciding if it should be published.

The present invention may be used to create electronic newspapers for a plurality of web sites. Thus, a news article, sports article or weather report may simultaneously become the content of a local school

newspaper, a regional newspaper, and a national newspaper. In the newspaper example, the content provider 12 may be a reporter, writer, photographer, subscriber (e.g., for letters to the editor or a feedback section), or even a
5 newswire service such as the Associated Press. Of course, the electronic newspaper is only one example of an application for the present invention and is not meant to limit the scope of the invention.

10 Figs. 6A-9R show sample screen shots for one commercialized implementation of the present invention in the form of a web content management product called "PublishNow," marketed by Regional Network Communications, Inc. (RNCi), Bethlehem, PA. PublishNow works in conjunction with other two products, "WriteNOW" and "CalendarNOW," also
15 marketed by RNCi. WriteNOW is a web content entry tool for use with PublishNOW. WriteNOW uses Microsoft Word. The screen shots illustrate exactly how a user interacts with the product, and thus are self-explanatory. Some additional explanation of selected figures is provided below.

20 Figs. 6A-6H show the article submission process using a browser-based version of WriteNOW.

Figs. 7A-7C show the article submission process using a non-browser version of WriteNOW software (ver. 2.25).

25 Figs. 8A-8Q show PublishNOW user interface screens. The "Site" Functions (Place Departments, Upload Template) are performed by the Site Administration Module, shown in Figs.

9A-9R.

Figs. 9A-9R show user interface screens for the Site Administration Module used with PublishNOW.

DETAILED DESCRIPTION
OF ON-LINE CALENDAR

5 Fig. 10 illustrates one embodiment of a system 100 for managing the on-line calendar in accordance with the present invention, and shows the interconnections between the major elements.

10 Referring to Fig. 10, a central site or a plurality of distributed sites $112_1, 112_2, \dots, 112_n$, hosts a master calendar 114. The master calendar includes an event database 116 for storing all events which appear in the organization calendars. Each organization 1, 2, ..., n has a section of the event database 116. Each organization has
15 "public" events and "private" events. Public events are stored as public entries in the event database 116, and private events are stored as private entries in the event database 116. A public event can be viewed by anyone accessing a web site associated with the master calendar
20 entity. A private event is posted only to a particular organization's calendar. Passwords and other appropriate security measures may be used to ensure that content is received only from the preauthorized providers 117. Users access the organization calendars in one of two ways. The
25 user may access the web site of the master calendar entity through a user computer 118 and an ISP 120. Alternatively, the user may directly access the web site of the organization via the user computer 118 and view the organization's calendar through its web site 112 which
30 either mirrors or links to the master calendar entity.

The on-line calendar described below is preferably

built using Microsoft Active Server Pages (ASP) and Component Object Model (COM) objects for fast response and design flexibility. ASP allows for good integration with the web server and system stability. COM objects make the system more efficient. Since a COM object is an actual compiled program (as opposed to a script that is processed) and is bound to the web server, the COM object becomes a natural extension of the server. Since a COM object is compiled, it runs faster and more efficiently.

The on-line calendar is preferably hosted on a Windows NT Server running Microsoft's IIS4 web server software, and the database is preferably stored in a Microsoft SQL Server.

Fig. 11 shows the database structure, including the objects, used for the on-line calendar.

Figs. 12-22 show sample screen shots for one preferred embodiment of the present invention in the form of a web content management product called "CalendarNow," marketed by Regional Network Communications, Inc. (RNCi), Bethlehem, PA. The screen shots illustrate exactly how a user interacts with the product, and thus are self-explanatory.

CALENDAR DISPLAY

The calendar display object is built using date routines that will fill-in the events for a particular month, defaulting to the current month. In addition to selecting a day in the month, the object has next and prior buttons that will scroll through the months of the year.

An automatic resizing feature is built into the

calendar object. This allows the calendar to fluctuate in size based on the data that surrounds it. Both the graphics and the text are resized proportionally, the graphics in steps of one pixel and the text in steps of one font size.

5 T strut (placeholder) is built in some cases to equalize both.

Fig. 12 is an example of a Calendar Display, and Fig. 13 is an example of a Calendar Detail. Hypertext links are underlined.

10 CALENDAR SEARCH

The calendar search is full-featured with several ways in which to view events. First, events are selected by the time period the user defines:

15 Today
By Month
By day of the month
By a range of days

20 Second, the events are further defined by the following parameters if someone selects specific values from their drop-down list boxes.

location (venue)
organization or department
keyword
type of event (category)

25 PUBLIC VS. PRIVATE EVENTS

This application allows for events to be designated as "Open to the Public" or "Private to your Organization". In general, when an event is defined as public, it will display on a calendar page that can be

viewed by anyone using a browser. In general, when the event is marked as private, it will only view on the organization's Intranet calendar page. This eliminates the need for dual entry of an event. An example of a private event is a departmental staff meeting, while a public event might be a charitable event held by the organization.

Fig. 14 shows SQL used in a Public Calendar Display and a Public Event Detail.

HYPERTEXT LINKS

The event detail generates several hypertext links, thereby allowing the user to gain additional information directly from the calendar page. Links are generated for the organization's web site and the online ticket house. The location name is linked out to mapping software. Email links are provided for ease of communications between a person viewing event information and the person who generated the event in the calendar.

MASTER EVENTS, SUBEVENTS, AND STAND-ALONE

Events are classified into 3 types. A Master Event is the uppermost level of an event hierarchy. All events that are posted under the Master Event are setup as Subevents and are grouped together by date in the calendar display. A stand-alone event does not have a master event and is a unique event in and of itself.

At the end of setting up a Master Event in the "Add Wizard" the application immediately returns to the beginning of the wizard in preparation for the entry of the first subevent. All entry fields are preset to the values from the Master Event for ease of use.

Fig. 15 shows a display screen adding an event for the Ominus Systems company calendar.

EVENT SCHEDULING

5 The application provides several ways for the event to be scheduled. An event can be non-repeating and have one end date. For a repeating event, options include daily, weekly, every 2, 3, or 4 weeks, monthly, every 2, 3, or 6 months (which covers quarterly) and yearly. Based on
10 the start date provided, the day of the week and the week of the month is calculated so an event can be scheduled once a month on that specific day.

15 Each repeat of the application can have a duration. An example of this would be a group meeting that runs for 2 days each quarter. Finally, the end date defines when the calculated repetitions should stop. The
20 application allows for up to 3 years in the future. When an event is inserted into the database, the program generates a record for each occurrence. In this way the calendar displays the event correctly on any day or month entered in the search criteria.

Fig. 16 shows a display screen used for adding master event scheduling details to the Ominus Systems calendar.

MULTI-CALENDAR

25 Flexibility has been built into the application so the event can be shown on several different calendars. Should a particular site accommodate more than one calendar, the person setting up the event can designate what calendars the event will show on. The calendars are preset in a

database table and display on the page with checkboxes.
More than one calendar can be selected.

When the event is inserted into the selected
databases, the controlling database maintains records of the
5 other calendar locations. If the event must be updated or
deleted, the controlling database makes calls to the other
calendars to apply the changes there as well.

Fig. 17 shows a display screen for adding an event
to plural calendars.

10 SECURITY LEVELS

Content-level security is provided to assure
accurate entry of events. Each calendar has an
Administrator account. This account has the capability to
add, update, and delete all components of the database. All
15 other levels in the security hierarchy are setup to either
approve events or enter events. There are no system limits
to the number of security levels an organization can setup.

Fig. 18 shows a security level hierarchy chart.

Fig. 19 shows a screen display which provides a
20 listing for the Administrator of all the accounts setup in
the database. The administrator can see what departments
have been setup and who is designated as an Administrator
and a User.

Fig. 20 shows a screen display used for updating
25 an account. Each account can be viewed individually. This
is where the Administrator designates an individual as
having approval security.

Fig. 21 shows a screen display used for processing

pending events. An event submitted by a non-Approval user is held pending review by an Administrator. The department approval account is sent an email notification that an event is pending approval. Upon review of the event information, the approver can add or delete the event. Adding an event will cause the event to display on the designated calendars.

CALENDAR HELP

The following text provides an example of "HELP" text for the CalendarNOW product hosted by RegionOnline, in accordance with the first embodiment of the present invention, as shown in the display screens above (Figs. 12-22) and discussed above. The HELP text further explains the operation of the present invention from the user's standpoint, and thereby further explains the programming attributes of the present invention.

[BEGIN HELP TEXT]

1. Navigating through the calendar (generally)

It's very easy to move from one day to another in the calendar. Simply click on a day of the month in the main calendar display and you'll see a list of all events happening on that day. Events are always displayed to the right of the main calendar display and they are grouped by category. You can also click on Last and Next, which appear to the left and right of the month respectively, to change the month you are viewing.

To view the details for any event, simply click on the event name. This will present you with information about the event such as its dates and time, feature, organization, location, description, admission fee and contact information.

2. Searching the calendar (generally)

In addition to browsing the calendar by day of the month, it's possible to search for specific events. This is done via the search form located beneath the main calendar display. A search will always begin on the current day that you are viewing and extends for a specified number of days. The default search length is 7 days, but the viewer can change that number to as many days as desired, up to 99 days. The search can be further defined by specifying exactly what feature, organization and location should be searched. The default search will encompass all categories, organizations and locations, but you can be as specific as you would like by pulling down on any of the three menus. Finally, a search may be specified by typing a keyword in the keyword entry field. Once you've defined your search, click the SEARCH button to view your results. If there are too many results, try to narrow your search criteria. If there are too few results, try broadening the search criteria.

3. Adding your events to the calendar (generally)

To add an event to the calendar, click on the EVENT SETUP button on the main calendar display. This will present a login page that gives access to the calendar administration module. If no login is available, the page will explain how to contact the calendar administrator for the creation of an account.

4. Detailed HELP text

Introduction

Welcome to the administrative center of the calendar. Using a series of simple and intuitive forms, you'll be able to post and maintain events for your

calendar. Since your calendar is part of the main RegionOnline system, events you add can also be seen by all of RegionOnline's users. Of course, you can always specify events as private so only individuals viewing your calendar will see them. You'll notice that the HELP button on each page links to a specific section in this document. If you are ever unfamiliar with a function or have a question about what to do. Simply click on HELP for the answers you need.

Logging in

The interactive calendar system requires that all individuals and organization who wish to add events be authorized to do so. Once you've been authorized, a login will be created and you will be given a logon ID and password. This login is specific to you and your organization. Please do not give this information to anyone else who wishes to post events to the calendar. If you do not have a logon ID and password or you have forgotten your login information, please contact the Calendar Administrator. After you've entered your logon ID and password, click the LOGIN button to access the calendar administration system.

Account maintenance

Updating your login information

You may update your login information at any time. This allows you to change your name and e-mail address as they appear in the calendar. In addition, you may change your password. To change your password, simply type your old password, your new password and then confirm your new password by typing it again. When finished, click the UPDATE button to commit login information changes to the system.

NOTE: You cannot change your login ID or organization.

Adding accounts

Calendar users who've been granted administrative access can create accounts, thus allowing new users to add their events to the calendar. In order to create a new account, you must specify the following: the user's full name, logon id, password, e-mail address and organization. In addition, you must also specify whether the user should be granted administrative privileges. Users who only need to add events for their organization should not be granted administrative privileges. If, however, the user is going to add events and create accounts for individuals in her or his organization, administrative privileges should be granted. When finished, click the ADD button to create the new account.

NOTE: Duplicate logon IDs are not allowed, if you inadvertently add an account with a logon ID that is already in use, you'll receive a warning message. Simply change the login ID to something unique and resubmit the account. Also, if you would like to create an account for someone and their organization is not listed, you must first create the organization with the "Add an organization" feature of the calendar administration system. (See Fig. 22 for a screen display which performs this function.)

Updating accounts

Calendar users who've been granted administrative access can update existing accounts. You must first select the login ID you wish to update and click the GO GET IT! button. The user's account will then be displayed. You can modify the user's e-mail address, active flag,

administrative privilege and organization. By setting the account's active flag to N, the user will no longer be allowed to logon. Conversely, an active flag of Y gives the user the ability to logon to the calendar system. Users who
5 only need to add events for their organization should not be granted administrative privileges. If, however, the user is going to add events and create accounts for individuals in her or his organization, administrative privileges should be granted. After making the desired changes to the account,
10 click the UPDATE button to commit the changes. Optionally, you can select another calendar user's login ID and click the GO GET IT! button to make other changes.

NOTE: You cannot modify a user's login ID or name. The user can update their name by logging in and using the "Update
15 your Login Information" feature of the calendar administration system. Also, if you would like to change the user's organization and their new organization is not listed, you must first create the organization with the "Add an Organization" feature of the calendar administration
20 system. (See Fig. 22.)

Listing accounts

Calendar users who've been granted administrative access can list existing accounts. This list is sorted by organization and allows the administrator to view both
25 administrative and general user logon IDs. In addition, full names and activity flags are displayed. An activity flag of Y means the user has the ability to logon to the calendar system and an activity flag of N means the user cannot logon to the calendar system. By clicking on any user ID, you can
30 modify the account. This function is identical to the update an Account feature of the calendar administration system.

Event maintenance

Adding events

Events can be added to the calendar system from one form. The first section of the form defines the event name and when the event will occur. Both the event name and starting date must be provided. The ending date, starting time and ending time, however, are optional. By default, all events are considered to be one time only. They occur once and do not reoccur. However, the calendar system supports reoccurring events and you can specify an event entry as occurring daily, weekly, monthly by day, monthly by date, quarterly by day, quarterly by date, yearly by day or yearly by date. By providing the date on which the event last occurred, the calendar system can accurately calculate when the next and future occurrences will take place.

The second section of the form is used to provide detailed information about the event itself. You must specify the feature with which the event is associated and the location where the event will occur. If an appropriate feature or location is not available, you can take advantage of the calendar's "Add a Feature" and "Add a Location" administrative functions respectively. In addition to the feature and location, you must also specify a contact name, phone number and event description. Optionally, you can specify additional location information for the event.

By default, all events are open to the public. However, some events may be for individuals in your organization only. In such cases, you can designate their calendar entries as private to your organization. This setting will ensure that the event is posted only to your organization's calendar and not on the main RegionOnline

calendar of events, which your calendar is section of.

When events are added, you have the option to associate them with an event series. An event series is a way to group similar events such as a lecture series or football games. To associate an event with a series, simply select the appropriate series. If you are currently entering the first event in a series, keep the default (none) setting and the series will automatically be created with the specified event name. You should also keep the default (none) setting if you do not wish to associate the event with a series. While the system will treat the entry as if IT were the first in a series, you are not obligated to add additional events to IT. IT can exist as a stand-alone or single event not associated with any others.

Finally, events can be flagged as having admission charges. By default events are considered to be free of charge, but you can designate an event as having a fee by selecting Yes to the question "Is admission charged for the event?" Optionally, you can specify the Internet ticket order address (a valid URL for the web site where tickets are being offered or sold) and any pertinent admission information.

When you are finished adding the event's information, click the ADD button to continue. You will then be asked to verify the event information you just provided. If you've designated the event to be part of an event series, the page will specify the name of the series under which it will be posted. If the event is the first of a series or it is not meant to be part of a series, the page will simply state 'This event is an Event Series. If any information in the page is incorrect, simply click the BACK

button on your browser to make necessary adjustments.
Otherwise, click the ADD button on the page to add the event
to the database. Your event will not be added to the
database until you verify the information and click the ADD
5 button.

NOTE: Events posted by administrative users will be posted
to on the calendar immediately. Events posted by general
users, however, require an administrator's approval. In such
cases notification will be sent to the administrator,
10 letting her or him know that a new event has been added and
requires approval.

Updating events

The first step to updating an event already posted
to the calendar is selecting it by name. Highlight the
15 event you wish to work with from the menu and click the GO
GET IT! button. The event's information should be displayed
and you can begin the second step, which is updating the
actual entry.

Events updated are done from one form. The first
20 section of the form defines the event name and when the
event will occur. The event name, starting date and ending
date must be provided. The staffing and ending times,
however, are optional. By default, all events are considered
to be one time only. They occur once and do not occur again.
25 However, the calendar system supports reoccurring events and
you can specify an event entry as occurring daily, weekly,
monthly by day, monthly by date, quarterly by day, quarterly
by date, yearly by day or yearly by date. By providing the
date on which the event last occurred, the calendar system
30 can accurately calculate when the next and future
occurrences will take place.

The second section of the form is used to provide detailed information about the event itself. You must specify the feature with which the event is associated and the location where the event will occur. If an appropriate feature or location is not available, you can take advantage of the calendar's "Add a Feature" and "Add a Location" administrative functions respectively. In addition to the feature and location, you must also specify a contact name, phone number and event description. Optionally, you can specify additional location information for the event.

By default, all events are open to the public. However, some events may be for individuals in your organization only. In such cases, you can designate their calendar entries as private to your organization. This setting will ensure that the event is posted only to your organization's calendar and not on the main RegionOnline calendar of events, which your calendar is section of.

When events are added, you have the option to associate them with an event series. An event series is a way to group similar events such as a lecture series or football games. To associate an event with a series, simply select the appropriate series. If you are currently entering the first event in a series, keep the default (none) setting and the series will automatically be created with the specified event name. You should also keep the default (none) setting if you do not wish to associate the event with a series. While the system will treat the entry as if it were the first in a series, you are not obligated to add additional events to it. It can exist as a stand-alone or single event not associated with any others.

Finally, events can be flagged as having admission

charges. By default events are considered to be free of charge, but you can designate an event as having a fee by selecting Yes to the question "Is admission charged for the event?" Optionally, you can specify the Internet ticket order address (a valid URL for the web site where tickets are being offered or sold) and any pertinent admission information.

When you are finished updating the event's information, click the ADD button to continue. You will then be asked to verify the event information you just provided. If you've designated the event to be part of an event series, the page will specify the name of the series under which it will be posted. If the event is the first of a series or it is not meant to be part of a series, the page will simply state "This event is an Event Series." If any information in the page is incorrect, simply click the BACK button on your browser to make necessary adjustments. Otherwise, click the UPDATE button on the page to add the event to the database. Your event will not be updated in the database until you verify the information and click the UPDATE button.

Deleting events

Removing an event from the calendar is a two-step process. First, you must select the event that you would like to delete from the list and click the GO GET IT! button. The event's information is displayed, but the event has not been removed from the calendar yet. The second step is to confirm your deletion by clicking the DELETE button at the bottom of the page. This will remove the entry from the system and return you to the main calendar administration screen. If you do not want to delete the current record, you

can optionally select another record to delete and click on the GO GET IT! button to continue the process.

Processing pending events

5 Calendar administrators have the responsibility to
approve calendar entries added by non-administrative users.
Once the user adds an entry, you will receive notice that an
event is awaiting your approval. The entry will not be
posted to the calendar until it is approved. Within the
administration system, you'll be shown the pending events
10 and given the option to either ADD or DELETE them. If you
wish to approve the pending event, click the ADD button. If
you wish to deny the pending event, click the DELETE button.
Events that are added/approved to the system will be visible
to all calendar users and denied events will be removed from
15 the system. If there are more than one event pending
approval, you will see the next pending entry after
approving the first. This continues until there are no
additional pending entries.

Organization maintenance

20 Adding organizations

 Main calendar administrators can create new
organizations. These are functional groupings within your
organization with which users and events are associated. To
add a new organization, you must provide the following
25 information: organization name, contact name, street
address, city, state, zip code and phone number. Optionally,
you may also specify a fax number, Internet address (a valid
URL for the organization's web site) and a brief
description. After completing the form, click the ADD button
30 to add the new organization to the calendar system.

Updating organizations

Main calendar administrators can update existing organizations. You must first select the organization you wish to update and click the GO GET IT! button. The organization's information will then be displayed. An active flag of Y means the organization's events are to be displayed in the calendar and an active flag of N means the organization's events are not shown. When updating the organization, the following information must be provided: contact name, street address, city, state, zip code and phone number. Optionally, you may also specify a fax number, Internet address (a valid URL for the organization's web site) and a brief description for the organization. After updating the organization's information, click the UPDATE button to commit the changes. Optionally, you can select another organization and click the GO GET IT! button to make other changes.

NOTE: You cannot change the organization name.

Location maintenance

Adding locations

Locations are the physical sites within your organization where events occur. An executive board room, theater or lecture hall are all examples of possible locations. Events are associated with locations to provide more specific directions to users who wish to attend. To add a new location, the following information must be provided: location name, street address, city, state and phone number. Optionally, you may also specify the Internet address (a valid URL for the location's web site) when creating a new location. Once you've defined the new location, click the

ADD button.

NOTE: Once you've added a new location, anyone else from your organization can add events to it. This includes individuals from other organizations.

5 Updating locations

All calendar users can update existing locations. You must first select the location you wish to update and click the GO GET IT! button. The location's information will then be displayed. An active flag of Y means the location is available for calendar event entry and an active flag of N means the location is not available. When updating the location, the following information must be provided: location name, street address, city, state, zip code and phone number. Optionally, you may also specify an Internet address (a valid URL for the organization's web site) for the location. After updating the location's information, click the UPDATE button to commit the changes. Optionally, you can select another location and click the GO GET IT! button to make other changes.

20 Feature maintenance

Adding Features

Main calendar administrators can create new categories. Categories are descriptive groupings with which all events are associated. For example, events could be categorized as Sports, Business or Entertainment. In order to create a new feature, you must first associate it with an existing RegionOnline feature. This is necessary because your calendar makes use of the main RegionOnline calendar system and your events can also appear on RegionOnline. You

do not have to use the RegionOnline feature names -- you merely have to associate your organization's feature names to one of those already defined by RegionOnline. After you've selected the RegionOnline feature, click the GO GET IT! button. You can then enter the feature name that you'd like to use on your calendar and click the ADD button. Optionally, you can select another RegionOnline feature and click the GO GET IT! button to add other categories.

Deleting Features

Main calendar administrators can delete categories. Because categories for your organization are related to RegionOnline categories, you must first specify the RegionOnline feature with which the feature to be deleted is associated. After selecting the RegionOnline feature and clicking the GO GET IT! button, you'll be presented with a list of categories defined by your organization. To delete a feature, simply click on it. Optionally, you can select another RegionOnline feature and click the GO GET IT! button to delete other categories.

[END OF HELP TEXT]

It will be appreciated by those skilled in the art that changes could be made to the embodiments described above without departing from the broad inventive concept thereof. It is understood, therefore, that this invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.

What is claimed is:

CLAIMS

1. An automated, computer-implemented content management system for publishing content to a plurality of electronically accessible sites, each site including at least one predesignated page layout having one or more content categories within the page layout, the system comprising:

(a) a content database which stores a plurality of content entry items submitted by one or more content providers;

(b) a content management database that specifies which content entry items appear in the content categories for each site, wherein the content management database may specify that a particular content entry item shall appear in content categories of a plurality of sites; and

(c) a site page assembler which automatically generates completed pages for each of the sites in the predesignated page layout format using the information stored in the content management database and the content database, wherein the same content entry item may be syndicated to a plurality of sites if specified by the content management database.

2. A system according to claim 1 wherein the content entry items include content submitted directly by a content provider.

3. A system according to claim 1 wherein the content entry items include pointers to the location of the contents from a content provider.

4. A system according to claim 1 wherein each

category includes a plurality of subcategories, the content management database specifying which content entry items appear in the content subcategories for each site, wherein the content management database may specify that a particular content entry item shall appear in subcontent categories of a plurality of sites.

5. A system according to claim 1 wherein each category includes at least one predesignated, authorized contributor.

6. A system according to claim 1 wherein each category includes at least one predesignated, authorized manager.

7. A system according to claim 1 wherein each category includes a plurality of content entry items.

8. A system according to claim 1 wherein the sites are selected from the group consisting of web sites, intranets and extranets.

9. A system according to claim 1 wherein each content entry item includes a short version and a full version, the content management database specifying:

(i) a category for the short version, and

(ii) a location within the site for the full version.

10. A system according to claim 9 wherein the short version is a headline describing the full version.

11. A system according to claim 1 wherein the system is web-based so that content is submitted and

assembled pages are made available to the plurality of sites via the worldwide web.

12. A system according to claim 1 wherein the plurality of sites are electronic media outlets.

13. A system according to claim 1 wherein the content is electronic digital assets or data.

14. A system according to claim 1 further comprising:

(d) a content entry device which allows the content provider to enter the content without using programming language.

15. An automated, computer-implemented on-line calendar system for posting event information associated with a plurality of entities, each entity having its own calendar, the system comprising:

(a) a calendar event database which accepts event entry calendar input information from a plurality of content providers and stores the event entries, each event entry being associated with one or more entities specified by the content provider, wherein event entries may specify a plurality of entities for posting; and

(b) a calendar assembler which generates calendars of events for each of the entities using the information stored in the calendar event database, wherein the same event entry may appear on calendars of a plurality of entities if specified by the calendar event database.

16. A system according to claim 15 wherein the event entries include private entries which appear only on

the calendar of an entity predesignated by the content provider.

17. A system according to claim 16 wherein event entries which are not designated as private entries are treated as public entries and are available for viewing by any entity calendar.

18. A system according to claim 15 wherein the entities are selected from the group consisting of organizations, businesses and individuals.

19. A system according to claim 15 wherein the event entries include one or more event descriptors selected from the group consisting location or venue, organization or department, keyword, and type of event or category, thereby allowing event entries in the calendar event database to be searched by descriptors.

<u>Category</u>	<u>Subcategories</u>	<u>Contents</u>	<u>Websites</u>	<u>Contributor</u>	<u>Manager</u>
Category 1	none	Item 1 Item 2	1, 2	JRC	MAL
Category 2	Subcateg. 1	Item 1 Item 2	1, 2	{ARZ	SRB
	Subcateg. 2	Item 1 Item 2		{BSC	
Category 3	none	Item 1 Item 2 www.cs/contents4	1, 6	SNA	FLS
Category 4	none	Item 1	1	SNA	FLS
Category 5	none	Item 1	1, 6	FRB	CNA

FIG. 1

2/66

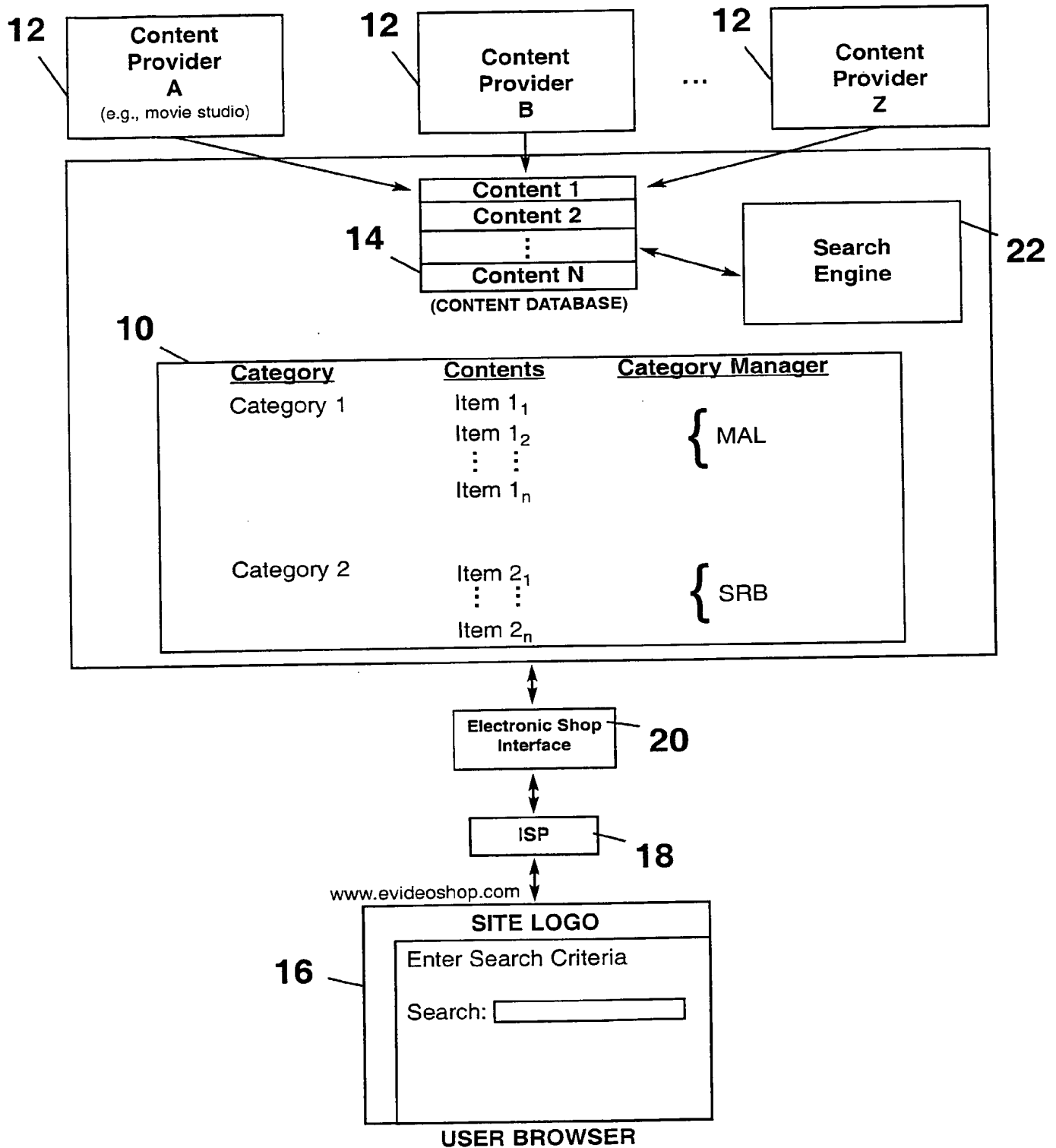


FIG. 2

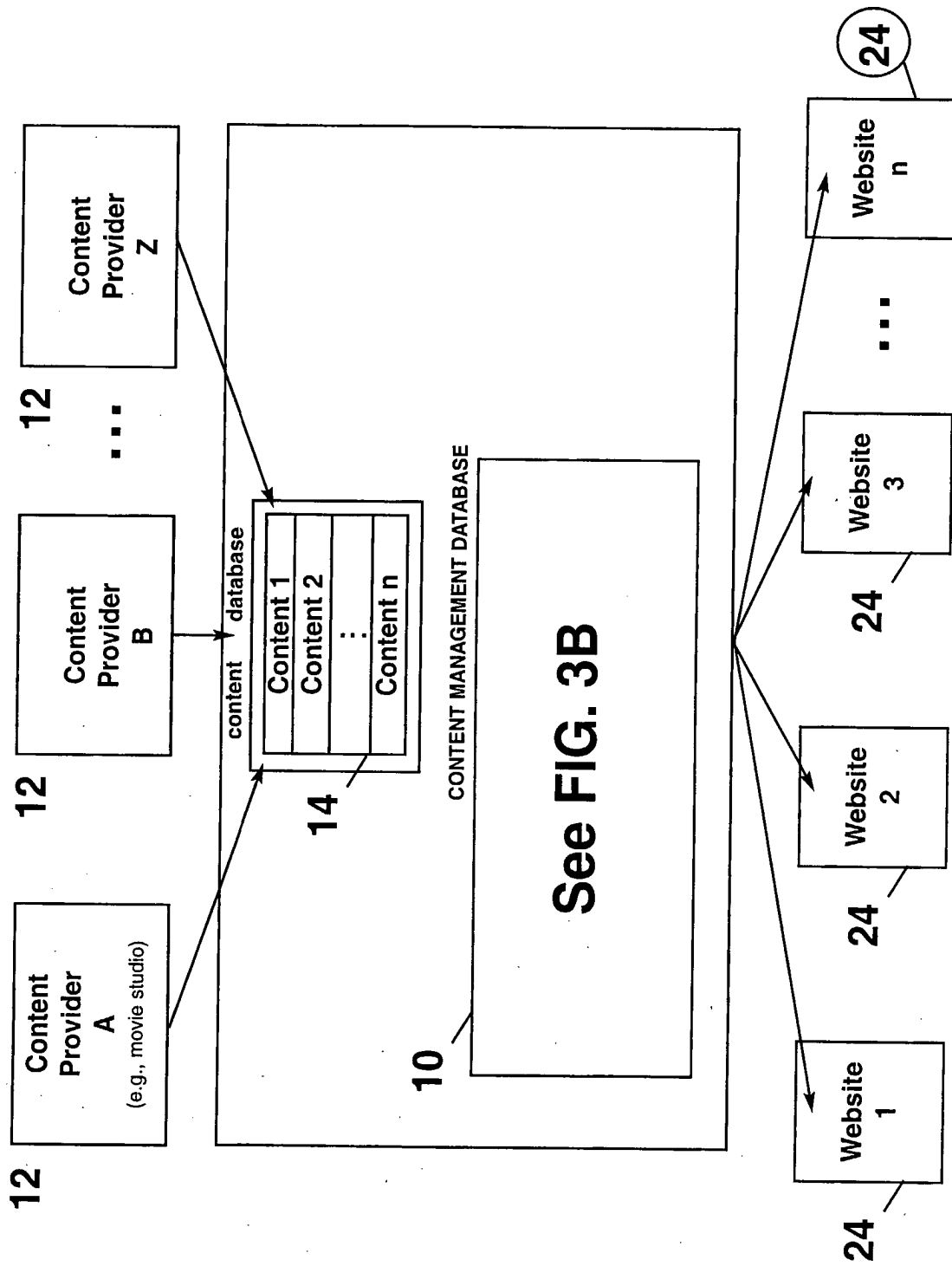


FIG. 3A

10 →

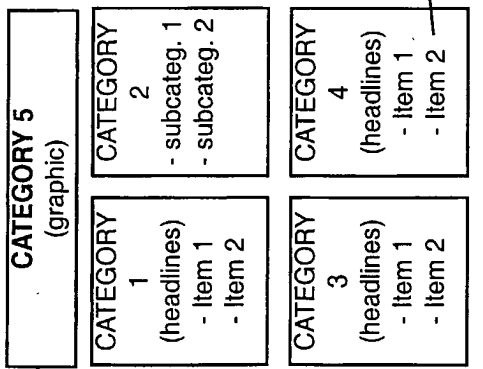
CONTENT MANAGEMENT DATABASE

<u>CATEGORY</u>	<u>WEBSITES WHICH RECEIVE THE CATEGORY</u>	<u>WEBSITE ADDRESS FOR FULL VERSION OF CONTENT (ITEMS)</u>
1	site1.com site2.org	site1.com/category1/item1 site1.com/category1/item2 site2.org/category1/item1 site2.org/category1/item2
2	site 1.com	site1.com/category2/subcategory1/item1 site1.com/category2/subcategory1/item2 site1.com/category2/subcategory2/item1 site1.com/category2/subcategory2/item2
	site2.org	site2.org/category2/subcategory1/item1 site2.org/category2/subcategory1/item2 site2.org/category2/subcategory2/item1 site2.org/category2/subcategory2/item2
3	site 1.com site 6.com	site1.com/category3/item1 site2.com/category3/item2 site6.com/category3/item1 site6.com/category3/item2
4	site1.com	site1.com/category4/item1 site1.com/category4/item2
5	site1.com site6.com	site1.com } (graphic placed on site6.com } home page)

FIG. 3B

site1.com

SITE 1 LOGO



SITE 1 LINKS

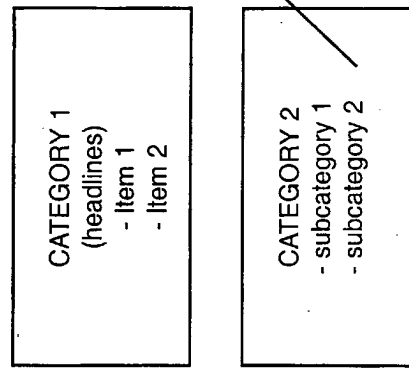
26

site1.com/category4/item2

ITEM 2
Full content

site2.org

SITE LOGO



SITE 1 LINKS

28

site2.org/category2

Category 2

Subcategory 1 (headlines)
- Item 1
- Item 2

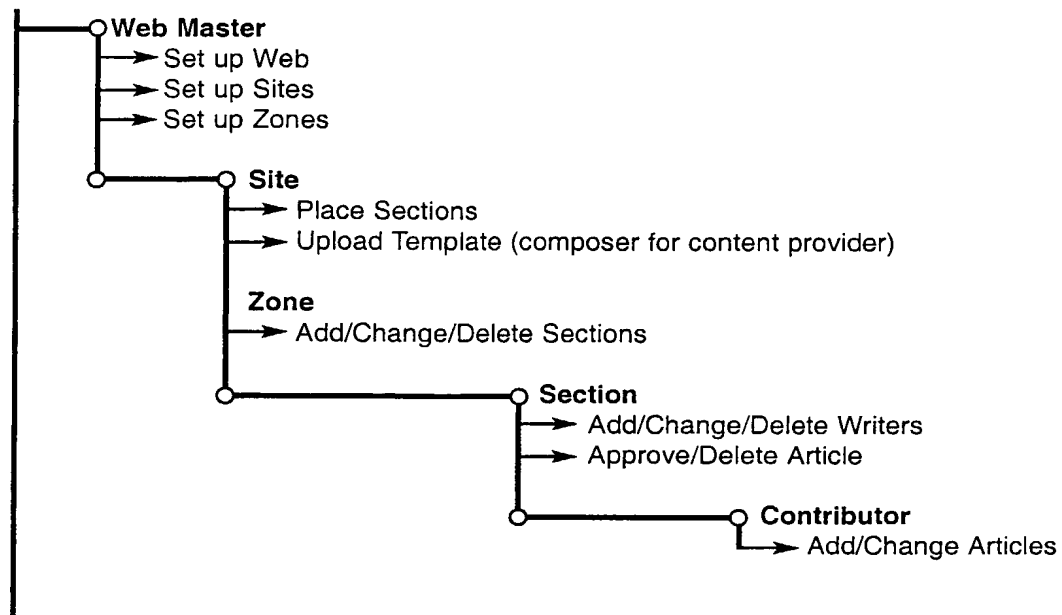
Subcategory 2 (headlines)
- Item 1
- Item 2

site2.org/category2/subcategory1/item1

ITEM 1
Full content

FIG. 4

6/66

Web Content Management System**FIG. 5**

7/66

Login

Please enter your user id and password.

User ID:

Password:

FIG. 6A

8/66

Site Selection

Please select the site you want to publish to:


Site: 

FIG. 6B

9/66

Article Information

Demo Site	
User ID:	internet
Email Address:	<input type="text" value="dbooths@rnci.com"/>
Section:	<input type="text" value="nydemo"/> or click SEARCH to find a section
Article Title:	<input type="text" value="RNCi's technology selected as web content management"/>
File to Upload:	click to search your file
or	
Free-format Text:	<input type="text"/>
<div><input type="button" value="SUBMIT"/> <input type="button" value="RESET"/></div> <div><input type="button" value="HELP"/></div>	

FIG. 6C

Section Search for Demo Site

User ID: internet

The section contains the characters:

Click on the section to continue.

[NYdemo](#)
[PhillyDemo](#)

FIG. 6D

Article Submission

Demo Site	
User ID:	internet
Email Address:	dbooths@rnci.com
Section:	nydemo
Article Title:	RNCi's technology selected as web content management system to manage and syndicate content across the Internet.
File to Upload:	P:/Media/Press Releases/1999 PRESS/REVISED RNCi's Technology Selected as Content Tool 990910.doc
File Status:	File upload was successful
Publish another Article Preview the Article Publish to a different site	
<div>HELP</div>	

FIG. 6E

From: publishNOW <kyu@rnci.com> on
To: Debra A Booths-Fickert/Rnci@Rnci
cc:
Subject: Action on your article submission to publishNOW.

Your article [] to nydemo in publishnow has been accepted at 9/20/99 4:08:24 PM

FIG. 6F

demonOW.com RNCi				
Get Your Free E-mail NOW!	Submit Content NOW	Post Your Website	Submit Your Event	Get Free Stuff
Feature Channels Arts Calendar News Web Sites	RNCi's technology selected as web content management system to manage and syndicate content across the Internet Richard shows Lycos the big deal no poll question available		September 20, 1999 Partly Sunny 55/37 5-Day Accu-Weather Forecast... Calendar Try our interactive calendar. The best way to post your community event. Have your event information read by hundreds of readers each week! Click HERE to search the entire (none) Calendar and find out what's going on in your area.	
About RegionOnline Alliances & Partners Other Regions Join Our Team Advertise Contact Us				

FIG. 6G

Article Preview

Demo Site

Please allow a few minutes for the article process to complete.

RNCi's technology selected as web content management system to manage and syndicate content across the Internet

- NEWS RELEASE - NEWS RELEASE-

Date: Monday, September 13, 1999

Contact: Debra Booths-Fickert, Director of Marketing

Phone: (610) 997-8100, Email: dbooths@RNCi.com

Federal Reserve Bank of Philadelphia and Ben Franklin Technology Center

Select RNCi's Web Content Management System to Manage and

Syndicate their Content across the Internet

Bethlehem, PA: 13-September-1999-RNCi, and Internet Content Media company, announced that the Federal Reserve Bank of Philadelphia and the Ben Franklin Technology Center have licensed RNCi's PublishNOW web content management system as the platform for their corporate web sites. In addition to site management, they will syndicate their content to multiple locations within their corporate web sites and external sites - including RNCi's national network of community web guides, RegionOnline.

⋮

[End of Previewed Article]

For more information, visit www.RegionOnline.com, and www.RNCi.com, call Debra Booths-Fickert at 610-997-8100, or send email to dbooths@RNCi.com.

#30#

[Publish another Article](#)

[Publish to a different site](#)

HELP

FIG. 6 H

WriteNow [X]

File Profile Advanced About Help

WriteNOW
Article Destination

Client: pubtest
Section: pubdirtest

Article Information

Title

☐ Publish without a title

Subtitle

Byline 1 Byline 2

Priority

pubdirtest

Profile [X]

WriteNOW

Client Section

User Name Password

Email Address

FIG. 7A

WriteNow		X
File Profile Advanced About Help		
WriteNOW		
Article Destination		
Client: pubtest		
Section: pubdirtest		
Article Information		
Title		
<input type="text"/>		
<input type="checkbox"/> Publish without a title		
Subtitle		
<input type="text"/>		
Byline 1	Byline 2	
<input type="text"/>	<input type="text"/>	
Priority		
<input type="text" value="0"/>		
<input type="button" value="Edit"/> <input type="button" value="Save"/> <input type="button" value="Send"/>		
pubdirtest		

Proxy Configuration		X
WriteNOW		
Proxy Host	Proxy Port	
<input type="text"/>	<input type="text"/>	
Direct connection is assumed if proxy server is not set.		
Content Server		
<input type="text" value="http://www.publishnow.com/"/>		<input type="button" value="OK"/>

FIG. 7B

WriteNow

X

FileProfileAdvancedAboutHelp

WriteNOW

Article Destination

Client: pubtest

Section: pubdirtest

Article Information

Title

☐ Publish without a title

Subtitle

Byline 1

Byline 2

Priority

0

Edit

Save

Send

pubdirtest

About WriteNOW

X

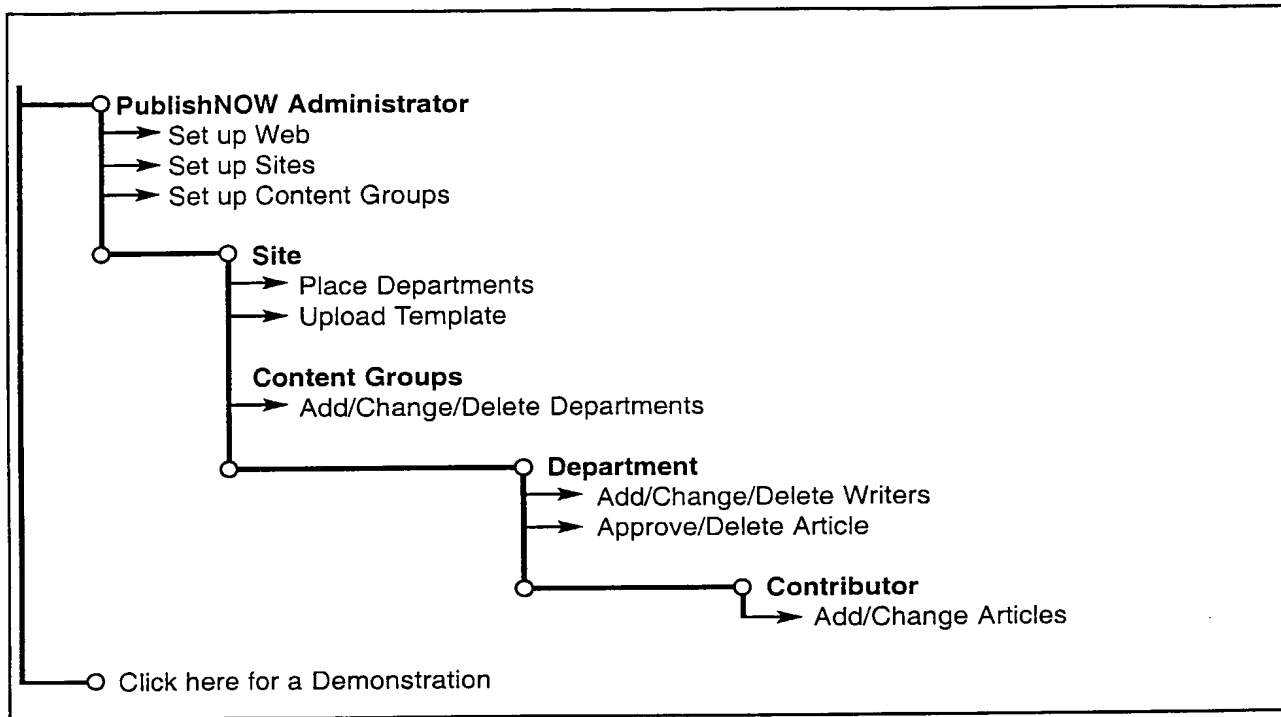
WriteNOW

Enables publishing to the Web
without knowing HTML.

Visit our web site at
www.rnci.com

OK

FIG. 7C

**FIG. 8A**

PublishNOW Administrator



Set up Web

As a Web manager, you may edit or add Web sites and content zones on your *Web*. The site manager will place the content by the section.

Name:

Password:

Logon

FIG. 8B

As a Web manager, you may edit or add Web sites and content zones on your Web. The site manager will place the content by the section.

Root DIR

d:\ms_its\www\clients

Owner

itnow

Password

WebRoot

http://www.regiononline

SMTP Server

smtp.regiononline.com

Email

support@mci.com

PublishNow Web Setup

FIG. 8C

PublishNOW Administrator



Set up Sites

As a Web manager, you may edit or add Web sites and content zones on your *Web*. The site manager will place the content by the section.

Name:

Password:

Logon

FIG. 8D

As a Web manager, you may edit or add Web sites and content zones on your Web. The site manager will place the content by the section.

SiteID

LVPA

User Name

Kenny

Password

URL

lv.pa.regiononline.com

Server Folder

e:\ms_iis\www\ro\lv\

CHANGE

DELETE

WB3Edemo

Kenny

lv.pa.regiononline.com

e:\ms_iis\www\ro\lv\

CHANGE

DELETE

RNCI

Kenny

e:\ms_iis\www\ro\lv\

CHANGE

DELETE

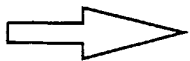
ADD

LOGOUT

FIG. 8E

SUBSTITUTE SHEET (RULE 26)

PublishNOW Administrator



Set up Content Groups

As a Web manager, you may edit or add Web sites and content zones on your *Web*. The site manager will place the content by the section.

Name:

Password:

FIG. 8F

As a Web manager, you may edit or add Web sites and content zones on your Web. The site manager will place the content by the section.

ZoneID

testimonials

3DAnimation

BethlehemStar

RegionOnline

RNCiawards

restaurants

y2k

User Name

shannon

shannon

shannon

syee

shannon

richard

shannon

Password

CHANGE

CHANGE

CHANGE

CHANGE

CHANGE

CHANGE

CHANGE

CHANGE

DELETE

DELETE

DELETE

DELETE

DELETE

DELETE

DELETE

DELETE

Comarketing

shannon

LOGOUT

CHANGE

ADD

DELETE

FIG. 8G

Content Groups



Add/Change/Delete Departments

As a Content Group manager, you may edit or add sections in your *Content Group*.
You are the quality assurer for the content of sections of your Content Group.

Choose a
Content
Group:

Username:

Password:

FIG. 8H

As a Content Group manager, you may edit or add sections in your *Content Group*. You are the quality assurer for the content of sections of your Content Group.

CalendarNOW Content Group Setup

Department	Owner	Password	Email
calendarnow	deb	*****	dbooths@mci.com
	logout		

FIG. 8 i

Department

➡ Add/Change/Delete Writers

As a Section Manager, you may change or add writers for a section.

Choose a
Department: ▼

Username:

Password:

FIG. 8J

As a Section Manager, you may change or add writers for a section.

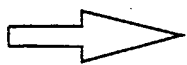
calendarnow Section User Setup

User Name	Password	Email	Pre-Approved
shannon	****		y
deb	*****		y
richard	****		y
sueyee	****		y

Logout

FIG. 8K

Department



Approve/Delete
Article

Choose an article:

Premier Communication Tool | By deb<2/11/99> | By deb<2/11/99> | By deb<8/31/99 by deb [y] ▼

CHOOSE

LOGOUT

FIG. 8L

Premier Communication Tool By deb<2/11/99> By deb<2/11/99 By deb<8/31/99> by deb	
<p style="text-align: center;">Comments:</p> <div style="border: 1px solid black; padding: 10px; min-height: 200px;"><p>Comments:</p><p>Comment on your Premier Communication Tool By deb<2/11/99> by deb<2/11/99 By deb<8/13/99></p></div> <div style="text-align: center; margin-top: 10px;"><div style="border: 1px solid black; padding: 2px 10px; display: inline-block; margin: 2px;">SEND</div><div style="border: 1px solid black; padding: 2px 10px; display: inline-block; margin: 2px;">APPROVE</div><div style="border: 1px solid black; padding: 2px 10px; display: inline-block; margin: 2px;">DELETE</div></div>	<div style="border: 1px solid black; padding: 5px;"><p>Premier Communication Tool</p><h2 style="margin: 0;">CalendarNOW</h2><p><u>Contact</u> our Sales Department for an Online Demonstration!</p><p>Premier Communication Tool</p><p>CalendarNOW is the perfect communication tool for businesses or organizations that post public or private event information. Entirely web-enabled, CalendarNOW allows users to post events from any computer accessible to the Internet - without installing any proprietary software. CalendarNOW is a central location for meetings, training schedules, trade shows, product launch dates, and other events that can be scheduled and accessed by all employees in different locations.</p><p style="text-align: center;">⋮</p><p>CalendarNOW Features - Front-End User Interface</p><ul style="list-style-type: none">· Clickable calendar display for easy day-to-day navigation· Events are grouped by category and event series· Customized headers and footers for organizational calendars· Advanced search capabilities· Interactive HELP area<p>For more information contact us today at 1.888.865.7624 or email us at info@RNCi.com.</p></div>

FIG. 8M

From: ePublisher Section latest/headlines <syee@rnci.com> on
To: Debra A Booths-Fichert/Rnci@Rnci
cc:
Subject: RNCi's Web Content Management Tool, CalendarNOW | By deb<8/13/99>

Send Comment on your RNCi's Web Content Management Tool, CalendarNOW | Bydeb<8/13 | By deb<8/13/99>
Deb,
The purpose of this press release...

FIG. 8 N

Content Source

Add/Change Articles

As a Content Contributor, you may edit or add articles in your *department*.

Choose a
Department: ▼

Username:

Password:

FIG. 8 O

As a Content Contributor, you may edit or add articles in your *department*.

Choose an article

Premier Communication Tool | By deb<2/11/99> | By deb<2/11/99> | By deb<2/11/99> | By deb<8/31/99> ▼

Append parts: If you set [append parts] to non-zero, you are in effect adding a new article and should change the article ID.

FIG. 8 P

Edit the parts of the article.

Article ID			
Premier Communication Tool	By deb<2/11/99>	By deb<2/11/99>	By deb<8/31/99> ▼
Lead Image			
Use<Lead Image>tag to place this image where you want it to appear			
You may type in, copy and paste in your content or upload an HTML file for each part of the article.			
<div>Part 1:<div>Premier Communication Tool</div><div><Lead Image><a>Premier Communication Tool<div>▲ □ ▼</div></div></div>			
HTML File:			
Anchor:			
Image File:			

(cont'd on Fig. 8Q-2)

FIG. 8 Q-1

Part 2:	<div style="text-align: right;">(cont'd from Fig. 8Q-1)</div> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <h2 style="margin: 0;">CalendarNOW</h2> <p>Contact our Sales Department for an Online Demonstration!</p> <p>Premier Communication Tool CalendarNOW is the perfect communication tool for businesses or organizations that post public or private events.</p> <p style="text-align: center;">⋮</p> <p>For more information, contact us today at 1-888-865-7624 or email us at info@RNCi.com.</p> </div> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <pre>

 Contact our Sales Department for an Online Demonstration!<P> Premier Communication Tool
CalendarNOW is the perfect communication tool for businesses or organizations that post public or private event information. Entirely ⋮ <P> For more information, contact us today at 1-888-865-7624 or email us at info@RNCi.com.<P> </pre> </div> <div style="margin-top: 10px;"> HTML File: <div style="margin-top: 5px;"> Anchor: <div style="border: 1px solid black; height: 20px; width: 100%;"></div> </div> <div style="margin-top: 10px;"> Image File: </div> </div>
----------------	--

Time to go up

2/11/99 10:14:00 AM

Time to go down

12/31/2099 11:14:00 AM

Priority

0

SUBMIT

FIG. 8 Q-2

<ul style="list-style-type: none">○ Login○ Template Add○ Template Delete○ Page Add○ Page Change○ Page Delete○ Page Report○ Block Setup○ Block Report○ Page Event Setup○ Publish Report○ PublishNOW Add○ IT Only	<h2>Login</h2> <p>Please enter your user id and password.</p> <p>User ID: <input type="text"/></p> <p>Password: <input type="password"/></p> <p><input type="button" value="Login"/></p>
---	--

FIG. 9A

<ul style="list-style-type: none">○ Login○ Template Add○ Template Delete○ Page Add○ Page Change○ Page Delete○ Page Report○ Block Setup○ Block Report○ Page Event Setup○ Publish Report○ PublishNOW Add○ IT Only	<p>Please select the site you want to administer:</p> <p>Site: <input type="text" value="RNCi"/> ▼</p> <p><input type="button" value="Login"/></p>
---	--

FIG. 9B



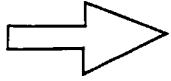
Template Add

<ul style="list-style-type: none">○ Login○ Template Add○ Template Delete○ Page Add○ Page Change○ Page Delete○ Page Report○ Block Setup○ Block Report○ Page Event Setup○ Publish Report○ PublishNOW Add○ IT Only	<h3>Template Add for RNCi</h3> <p>Select the Template Number: <input type="text" value="1"/> <input type="button" value="▼"/> <input type="button" value="GO GET IT!"/></p> <hr/>
---	---

FIG. 9C

<ul style="list-style-type: none"><input type="radio"/> Login<input type="radio"/> Template Add<input type="radio"/> Template Delete<input type="radio"/> Page Add<input type="radio"/> Page Change<input type="radio"/> Page Delete<input type="radio"/> Page Report<input type="radio"/> Block Setup<input type="radio"/> Block Report<input type="radio"/> Page Event Setup<input type="radio"/> Publish Report<input type="radio"/> PublishNOW Add<input type="radio"/> IT Only	<h3>Template Add for RNCi</h3> <p>Select the Template Number: <input type="text" value="1"/> <input type="button" value="▼"/> <input type="button" value="GO GET IT!"/></p> <hr/> <h4>Template1</h4> <p>This template is already in use by site pages. Please contact IT if you need to modify this template.</p> <ul style="list-style-type: none">casearmstrongcaseexpresscaselucetcasenewyorkclientlinksdemoofproductsfaqHotNewsinternetmarktipsphillybusjournalstrivepub
---	--

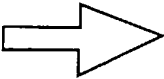
FIG. 9D



Template Delete

<ul style="list-style-type: none">○ Login○ Template Add○ Template Delete○ Page Add○ Page Change○ Page Delete○ Page Report○ Block Setup○ Block Report○ Page Event Setup○ Publish Report○ PublishNOW Add○ IT Only	<h3>Template Delete for RNCi</h3> <p>Select the Template Number: <input type="text" value="Template 1"/> ▼</p> <hr/> <p><input type="button" value="DELETE"/></p>
---	---

FIG. 9E



Page Add

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOW Add
- IT Only

Page Add for RNCi

Page name:

Select the Template Number:

Template 1

▼

ADD

FIG. 9F



Page Change

<ul style="list-style-type: none">○ Login○ Template Add○ Template Delete○ Page Add○ Page Change○ Page Delete○ Page Report○ Block Setup○ Block Report○ Page Event Setup○ Publish Report○ PublishNOW Add○ IT Only	<p>Page Change for RNCi</p> <p>Select the Page: <input type="text" value="3danimation"/> <input type="button" value="▼"/> <input type="button" value="GO GET IT!"/></p> <hr/>
---	--

FIG. 9G

- ☐ Login
- ☐ Template Add
- ☐ Template Delete
- ☐ Page Add
- ☐ Page Change
- ☐ Page Delete
- ☐ Page Report
- ☐ Block Setup
- ☐ Block Report
- ☐ Page Event Setup
- ☐ Publish Report
- ☐ PublishNOW Add
- ☐ IT Only

Page Change for RNCi

Select the Page: 3danimation ▼

GO GET IT!

Page name: 3danimation

New Page Name:

New Template: Template2 ▼

UPDATE

FIG. 9H



Page Delete

<ul style="list-style-type: none">○ Login○ Template Add○ Template Delete○ Page Add○ Page Change○ Page Delete○ Page Report○ Block Setup○ Block Report○ Page Event Setup○ Publish Report○ PublishNOW Add○ IT Only	<h3>Page Change for RNCi</h3> <p>When you delete a page, the section blocking for that page is deleted also.</p> <p>If you delete an active page, the site will generate a 404 error.</p> <p>Select the Page: <input type="text" value="3danimation"/> ▼</p> <p><input type="button" value="DELETE"/></p>
---	---

FIG. 9 i



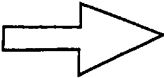
Page Report

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOW Add
- IT Only

Page Report for RNCi

3danimation	Template2
aboutrol	Template8
aboutus	Template8
affiliates	Template8
affiliatesonly	Template8
Alacarteoptions	Template8
artandentertainment	Template8
article	template2
associations	Template8
audiovideo	template2
⋮	
whitepaper	Template2
writenow	Template8
y2k	Template2

FIG. 9 J



Block Setup

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOW Add
- IT Only

Block Setup for RNCi

Select the Page you want to setup:

Page Name: 3danimation ▼

➡

FIG. 9K

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOW Add
- IT Only

Block Setup for RNCiTemplate2 and 3danimation

Col	Block	Code*	Pub DB or Link	Section**	Part	Archive
1	1	(none) ▼	rncipub		2	1
2	1	Publish ▼	rncipub	3danimation	2	1

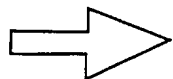
*Required information

**Accipiter location, Image, File, Navbar, and Custom names go in Section

←

→

FIG. 9L



Block Report

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOW Add
- IT Only

Block Report for RNCi

Page	Column	Block	Code	DB Name	Section	Part	Arc
3danimation	1	1	(none)	rncipub		2	1
3danimation	2	1	Publish	rncipub	3danimation	2	1
aboutrol	1	1	Publish	rncipub	aboutrol	2	1
aboutrol	2	1	File	rncipub	aboutrol.htm	2	1
aboutrol	2	2	Publish	rncipub	linksrol	2	1
aboutus	1	1	Publish	rncipub	whoweare	2	1
aboutus	2	1	File	rncipub	about.htm	2	1
aboutus	2	2	Publish	rncipub	links	2	1
affiliates	1	1	Publish	rncipub	affiliates	2	1
affiliates	2	1	File	rncipub	affilrol.htm	2	1
affiliates	2	2	Publish	rncipub	linksrol	2	1
affiliatesonly	1	1	Publish	rncipub	affiliatesonly	2	1
affiliatesonly	2	1	File	rncipub	contaffilrol1.htm	2	1
⋮							
whitepaper	1	1	Navbar	rncipub	navbar	2	1
whitepaper	2	1	Publish	rncipub	whitepaper	2	1
writenow	1	1	Publish	rncipub	writenow	2	1
writenow	2	1	File	rncipub	writeimg.htm	2	1
writenow	2	2	Publish	rncipub	linksthree	2	1
y2k	1	1	Publish	rncipub	y2k	2	1
y2k	2	1	(none)	rncipub		2	1

FIG. 9 M



Page Event Setup

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOW Add
- IT Only

Page Calendar Event Setup for RNCi

Select the Page you want to setup:

Page Name:

FIG. 9 N

<ul style="list-style-type: none">○ Login○ Template Add○ Template Delete○ Page Add○ Page Change○ Page Delete○ Page Report○ Block Setup○ Block Report○ Page Event Setup○ Publish Report○ PublishNOW Add○ IT Only	<div>Page Calendar Event Setup: Bronze</div> <p>There are no events listed for this page</p> <div><div>ADD</div><div>DELETE</div></div>
---	--

FIG. 9 O

- ☐ Login
- ☐ Template Add
- ☐ Template Delete
- ☐ Page Add
- ☐ Page Change
- ☐ Page Delete
- ☐ Page Report
- ☐ Block Setup
- ☐ Block Report
- ☐ Page Event Setup
- ☐ Publish Report
- ☐ PublishNOW Add
- ☐ IT Only

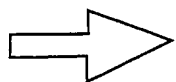
Page Calendar Event Setup: Bronze

Select events from:

▼

GO GET IT!

FIG. 9 P



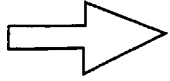
Publish Report

- Login
- Template Add
- Template Delete
- Page Add
- Page Change
- Page Delete
- Page Report
- Block Setup
- Block Report
- Page Event Setup
- Publish Report
- PublishNOW Add
- IT Only

PublishNOW Report for RNCi

Page	Database Name	Section	Part#	Archive
3danimation	rncipub	3danimation	2	1
aboutrol	rncipub	aboutrol	2	1
aboutrol	rncipub	linksrol	2	1
aboutus	rncipub	whoweare	2	1
aboutus	rncipub	links	2	1
affiliates	rncipub	affiliates	2	1
affiliates	rncipub	linksrol	2	1
affiliatesonly	rncipub	affiliatesonly	2	1
affiliatesonly	rncipub	linksrol	2	1
Alacarteoptions	rncipub	Alacarteoptions	2	1
Alacarteoptions	rncipub	linksthree	2	1
artandentertainment	rncipub	artandentertainment	2	1
⋮				
webservice	rncipub	webservice	2	1
whatsnew	rncipub	currentpressteaser	2	1
whatsnew	rncipub	linksfour	2	1
whitepaper	rncipub	whitepaper	2	1
writenow	rncipub	writenow	2	1
writenow	rncipub	linksthree	2	1
y2k	rncipub	y2k	2	1

FIG. 9 Q



PublishNOW Add

<ul style="list-style-type: none">○ Login○ Template Add○ Template Delete○ Page Add○ Page Change○ Page Delete○ Page Report○ Block Setup○ Block Report○ Page Event Setup○ Publish Report○ PublishNOW Add○ IT Only	<h3>PublishNOW Add</h3> <p>This page allows you to setup one Content Group and assign sections in the PublishNOW database. The program will retrieve all of the PublishNOW sections that you have entered. A section and writer will be setup for each.</p> <p>Content group: RNCi</p> <p>Section owner: <input type="text"/></p> <p>Section password: <input type="text"/></p> <p>Email address: <input type="text"/></p> <p style="text-align: center;"><input type="button" value="ADD"/></p>
---	--

FIG. 9 R

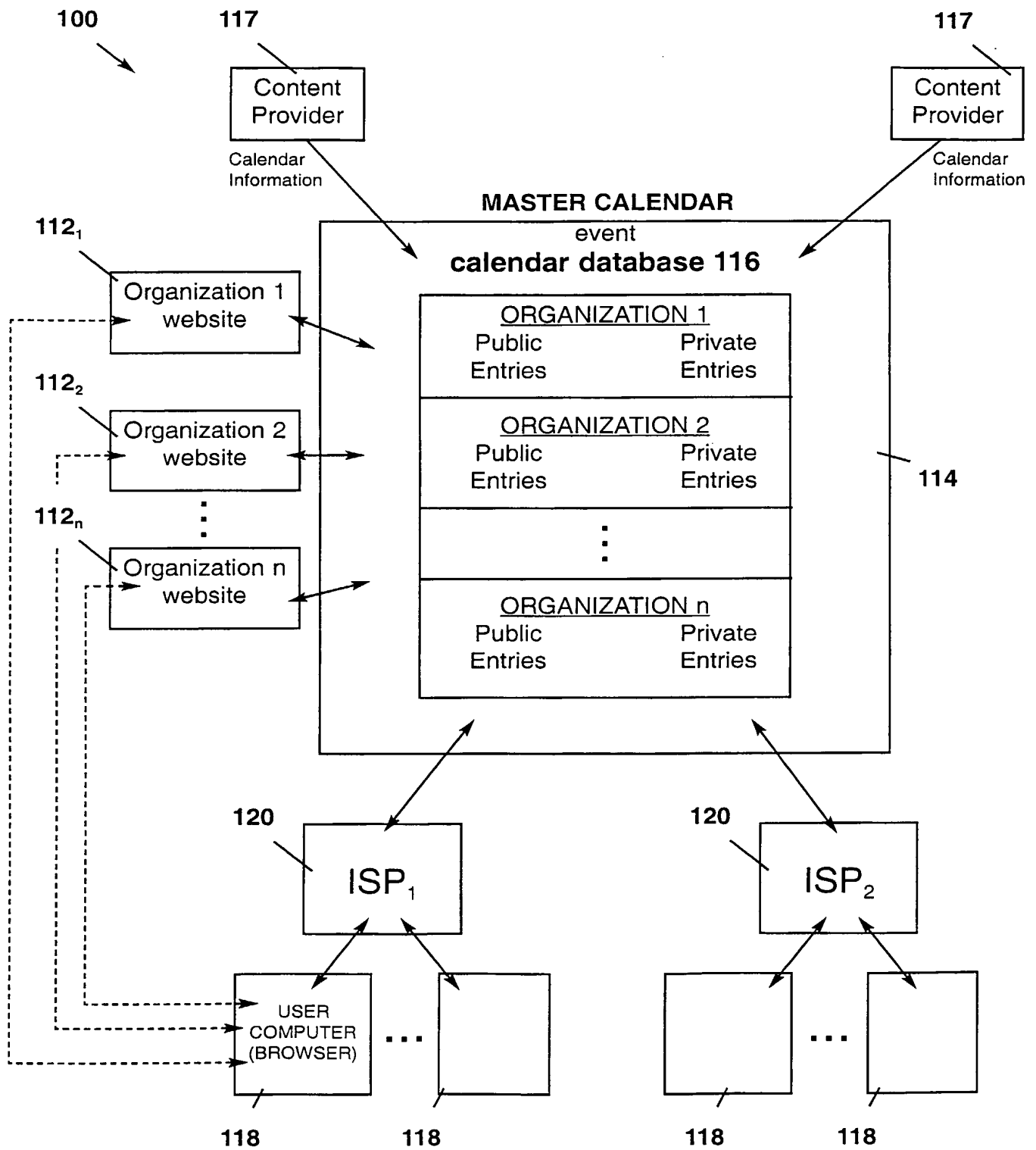


FIG. 10

CALENDAR OBJECTS

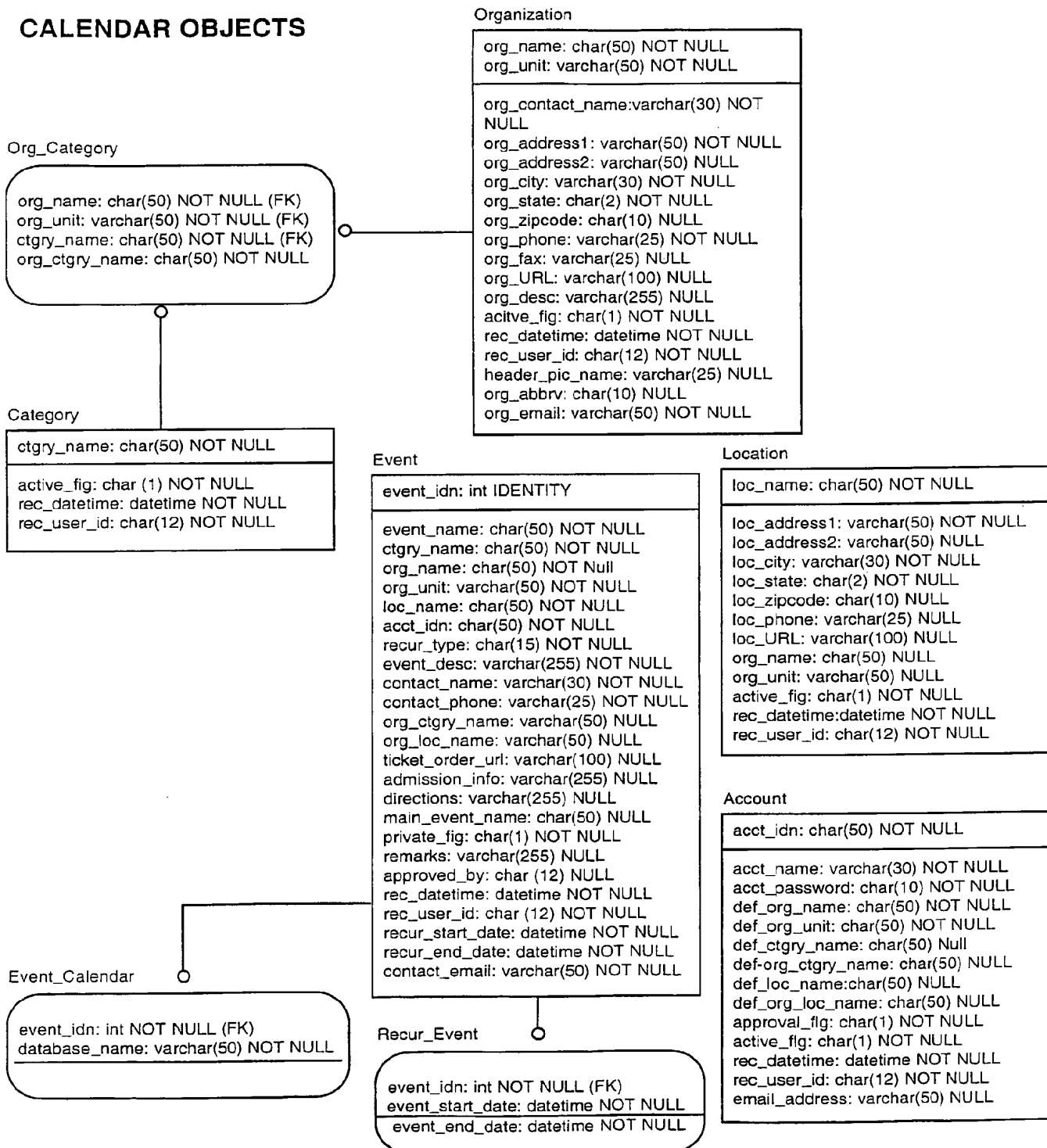


FIG. 11

Example of Calendar Display

BROWSER
File Edit View Go Window Help

Back Forward Reload Home Search Guide Print Security Stop

Address: <http://mdbeth2/roical/calendarnow/calendar.asp>

Entertainment

Sports Class/League

- YMCA and YWCA of Allentown:
[Joint Venture \(8/24 - 12/28\)](#)
- YMCA and YWCA of Allentown:
[Aqua Aerobics \(8/25 - 12/31\)](#)

Sports

NCC General Events

- Northampton Community College:
[18th Annual NCC Foundation Golf Tournament \(9/28\)](#)
- Northampton Community College:
[18th Annual NCC Foundation Golf Tournament \(9/28\)](#)

Wilson Sports

- Wilson High School:
[Wilson vs. Moravian](#)

J F M A M J J A S O N D

Last	September							Next
SUN	MON	TUE	WED	THU	FRI	SAT		
		1	2	3	4	5		
6	7	8	9	10	11	12		
13	14	15	16	17	18	19		
20	21	22	23	24	25	26		
27	28	29	30					

Click on date above to view daily events.

Starting for days

Feature:

Organization:

Location:

Keyword:

FIG. 12

SQL used in a Public Calendar Display

```

"Select" & CatField & " as CatU, " & OrgField & " as OrgU, event_start_date, " & LocField &
as LocU, event_name, event.event_idn, event_end_date, main_event_name FROM Event inner
join Recur_event on event.event_idn = Recur_event.event_idn
where event_start_date<= "& EndDate &
and event_end_date>=" & StartDate If(Category = "" "" " and " & CatField & " = " & Category
&""")
If(Org= "" "" "and " & OrgField & " = " & Org & """)
If(Location = "" "" " and " & LocField & " = " & Location & """)
and approved_by <> ""
If(Coverage <> "" "" " and Private_fig = 'N' ")
and main_event_name <> 'main'
and event_desc like "%" & Keyword & "%" or event_name like "%" & Keyword & "%" or
main_event_name like "%" & Keyword & "%" )
ORDER By Catfield, main_event_name, event_start_date

```

SQL used in a Public Event Detail

```

SELECT ctgry_name as category, org_name as OrgUnit, loc_name, org_loc_name,
event_name, main_event_name, event_desc, directions, remarks,
contact_name, contact_phone, contact_email, admission_info, ticket_order_URL
FROM Event
where event_idn = & EventID

```

FIG. 14

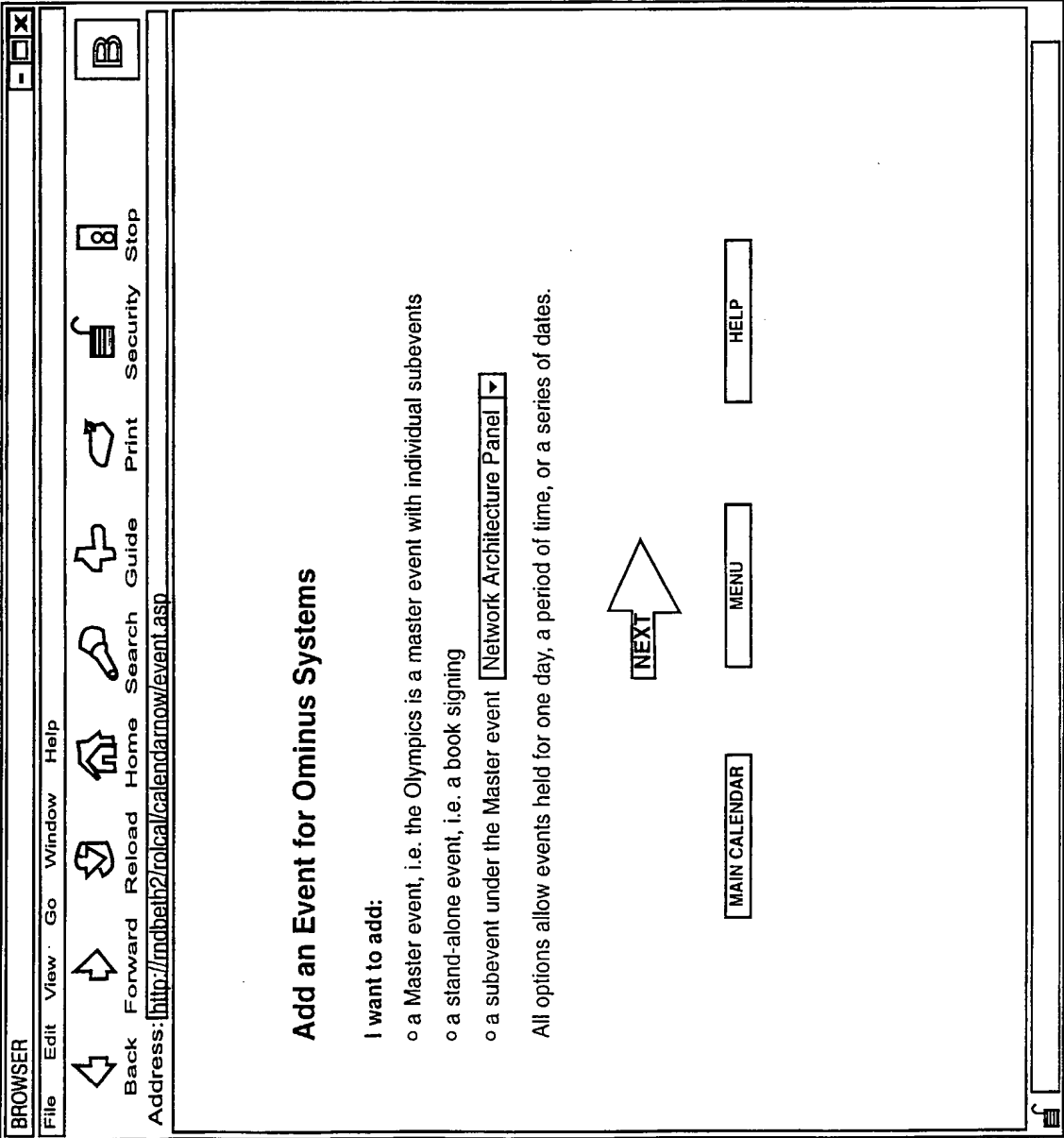


FIG. 15

BROWSER

File Edit View Go Window Help

Back Forward Reload Home Search Guide Print Security Stop

Address: <http://mdbeth2/rolcal/calendarnow/eventdate.asp>

Add a Master Event for Ominus Systems

Network Architecture Panel

I want to add:

- ☐ Do not repeat this event. The event ends on 09 28 1998
- ☐ Repeat this event
 - ☐ Daily
 - ☐ Weekly
 - ☐ Every 2 weeks
 - ☐ Monthly
 - ☐ Every 2 months
 - ☐ Yearly
 - ☐ on the fourth Monday of every Month

Each repeat of this event runs for 01 day(s)

FIG. 16

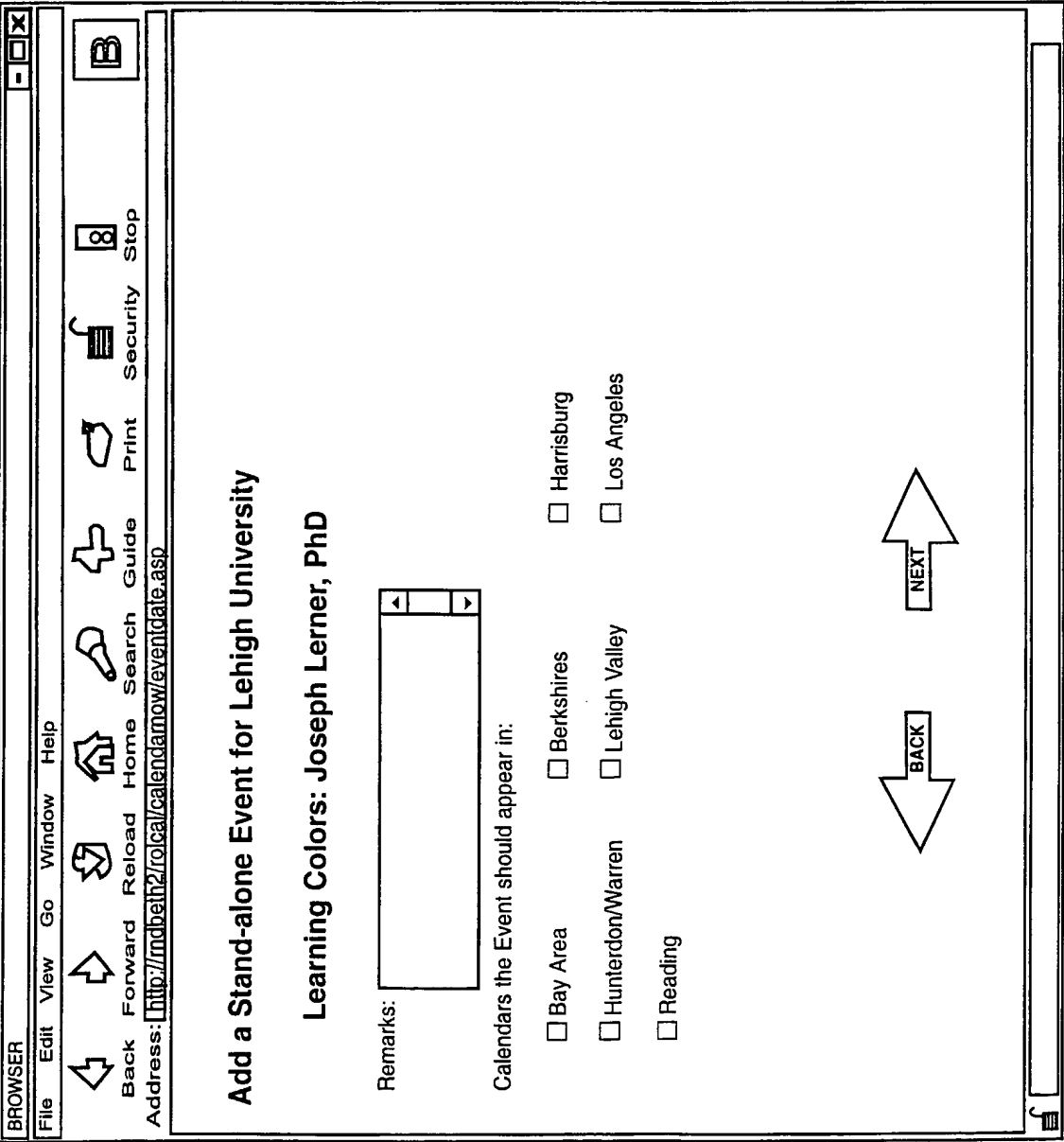
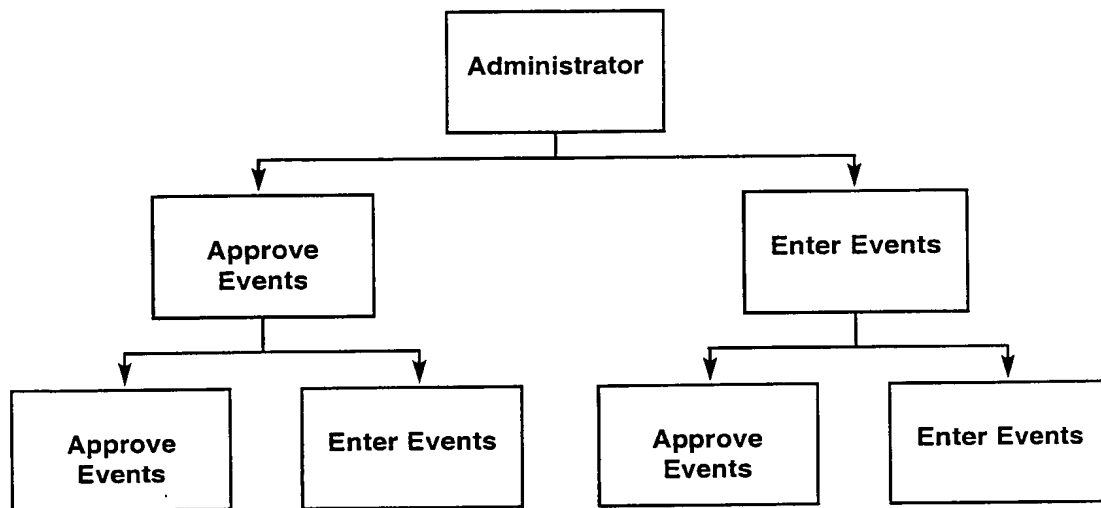


FIG. 17

62/66

Security Level Hierarchy

**FIG. 18**

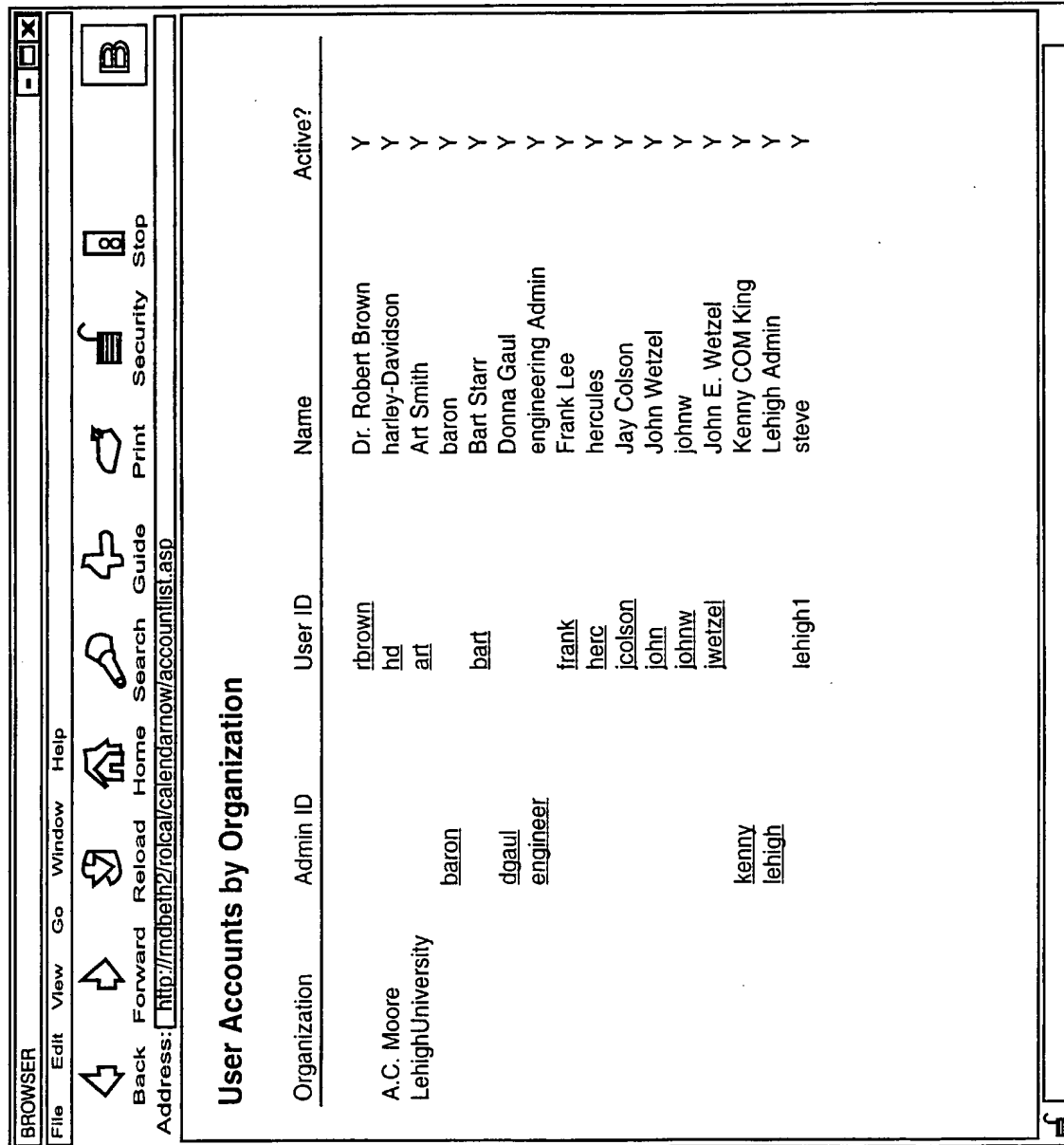


FIG. 19

BROWSER File Edit View Go Window Help

Back Forward Reload Home Search Guide Print Security Stop

Address: <http://mclbein2/rolcal/calendarnow/accountchg.asp?acct=jwetzel>

Update an Account

Account Name:

User ID: jwetzel

User's full name: John E. Wetzel

User's Organization: Lehigh University

email Address:

New Password:

Active Flag: ☒

Should this user be granted Administrative privileges? ☐ Yes ☒ No

FIG. 20

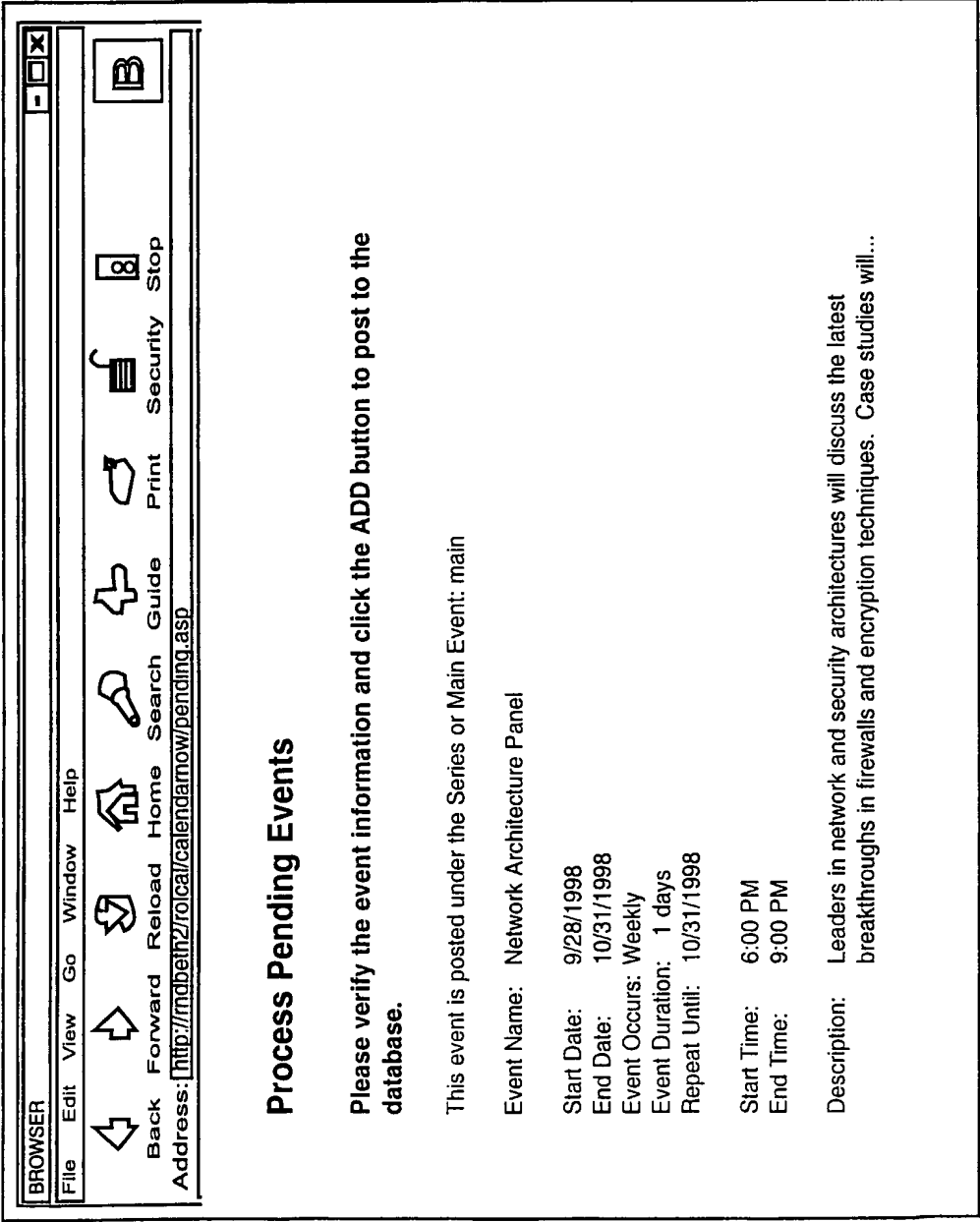


FIG. 21

BROWSER

File Edit View Go Window Help

Back Forward Reload Home Search Guide Print Security Stop
Address: <http://www.regiononline.com/calenda/org.asp>

Add an Organization

Organization

Name*:

Contact

Name*: Email:

Organization Address:

Street1*:

Street2:

City/State/Zip*:

Phone*: Fax:

Internet

Address:

Organization

Description:

*Required information

FIG. 22

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 17/30

US CL :707/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 707/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WEST, EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y, P --- A	US 5,819,271 A (MAHONEY ET AL) 06 OCTOBER 1998, SEE ENTIRE DOCUMENT.	1-13 ----- 14-19
Y, P --- A	US 5,864,871 A (KITAIN ET AL) 26 JANUARY 1999, SEE ENTIRE DOCUMENT.	1-13 ----- 14-19
Y, P --- A	US 5,857,181 A (AUGENBRAUN ET AL) 05 JANUARY 1999, SEE ENTIRE DOCUMENT.	1-13 ----- 14-19

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*B" earlier document published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
*O" document referring to an oral disclosure, use, exhibition or other means	
*P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

10 MARCH 2000

Date of mailing of the international search report

02 MAY 2000

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

ALVIN OBERLEY

Telephone No. (703) 305-9716

Joni Hill